ISSUE 2 ● AUGUST 1988 ● £2.50

ST AMIGA FORMAT

The complete package for Atari ST and Commodore Amiga owners

VIDEO STARS!

ST and Amiga beam in on CDs, laser disks and animation

Power survey of top software and Atari laser

DESKTOP PUBLISHING

BLOOD AND CORRUPTION

Explosive reviews of Captain Blood and Corruption

- **MAKE MUSIC –** Getting started with MIDI
- **SOFTWARE GALORE –** The Amiga PD scene
- **SUPER SCOPE –** Kuma's ST Oscilloscope reviewed

ST AMIGA FORMAT
ISSUE 2 ■ AUGUST 1988

PUBLISHED BY
FUTURE PUBLISHING LTD
4 QUEEN STREET
BATH
AVON BA1 1EJ
Phone: 0225 446034
Fax: 0225 446019

CO-EDITORS
Ben Taylor
Simon Williams

TECHNICAL EDITOR
Richard Monteiro

GAMES REVIEWS
Andy Storer

ART EDITOR
Gordon Druce

ADDITIONAL DESIGN
Dean Wilson
Angela Neal

ADVERTISING MANAGER
Nora Lawton
061-474 7333

GAMES ADVERTISING
Jon Beales
0225 446034

PUBLISHER
Chris Anderson

SUBSCRIPTIONS/MAIL ORDER
Future Publishing Ltd,
The Old Barn, Somerton
Somerset TA11 7PY
0458 74011

PHOTOGRAPHY
Bob Whitfield
Photography, Bath

PRINTERS
Chase Web Offset,
Plymouth

DISTRIBUTORS
6 Leigham Court Rd,
Streatham SW16 2PG

© **Future Publishing Ltd 1988**
ST/Amiga Format is an independent publication and has no links whatsoever with Atari or Commodore.
We welcome unsolicited contributions from readers. Please enclose an SAE with material if you want it returned. Payment for accepted items is made 4 weeks after publication.
No part of this magazine may be reproduced in any form without permission.

ST AMIGA FORMAT

The complete package for Atari ST and Commodore Amiga owners

NEWS 5
All that's new and vital on the ST and Amiga – goings on at the recent Commodore Show and first sightings of up and coming games.

FUTURES 12
It's video, Jim, but not as we know it. All you've been dying to ask about interactive video, CD-ROMs and the exciting world of CD-Video.

AMIGA PD 72
All the programs you'll ever need are already out there, waiting to be claimed. We explain how to get at them.

SPECIAL OFFERS 89
More cut price goodies from the wide boys on the ST Amiga Format market stall. And why not take out a subscription while you're there?

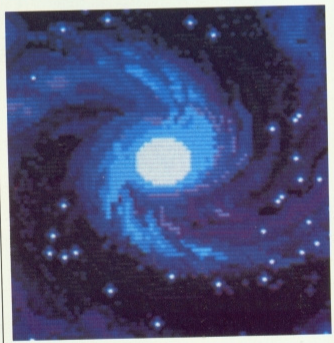
GOLD DUST 94
Steve Gold has his ear to the wires – rumours abound of a new ST operating system, writs, counterwrits and other good news for lawyers.

LETTERS 95
Will we publish your bouquet or brickbat? Or answer that question you've puzzled over for months? You only have to flip to these pages to find out.

ESCAPE SEQUENCE 98
The page where all those ridiculous PR stunts are exposed to public scorn. Your company name in this section ensures success – Superheroes included.

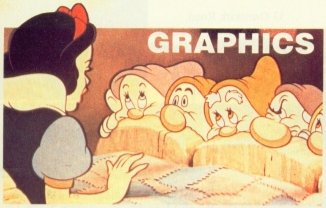
DISK EXTRA
Demos of *Power BASIC*, *Digicalc* and *StarRay* punch their way onto this month's cover disk, plus a host of utilities for ST and Amiga owners. Get that disk drive whirring!

GAMES



SCREENPLAY 43
Only the true stars make it into our monthly Star Chamber. The patent Format review system highlights the best in *Captain Blood*, *Corruption*, *Sentinel* and many more.

GAMEBUSTERS 74
Tips and tricks to put the colour back in your cheeks. You won't be sitting still for long with this month's game gazumpers.



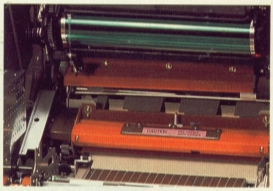
DELUXE VIDEO 36

A full review of this hot Amiga video package, plus who's doing what in the world of computer animation, and a look back at cartoon history.

REVIEWS

DESKTOP PUBLISHING 16

Both Atari and Commodore are making inroads into this burgeoning market. A survey of the best available on both machines.



K-SCOPE 25

Why stop with software for your ST? Kuma would like you to use it as an oscilloscope as well.

DIGICALC 26

What do spreadsheets do and does Digita's Digicalc come up to spec on the ST?

QUICKIES 31

A rare thing – primary school software for the ST tested by primary school children, and an Amiga typing tutor tested by a trainee typist.

WRITE AND FILE 33

All-in-one WP and database for the Amiga. See how well they integrate in our full-feature review.

BOOK LOOK 88

Ever wondered who invented computers? *Portraits in Silicon* interviews the pioneers.

POINTLESS ARGUMENT

Despite the irresistible summer lure of sun-soaked foreign beaches, hundreds of you have found the time to fill in issue 1's questionnaire – thanks, and keep those letters rolling in too.

Among the opinions slowly emerging is a strong brand-loyalty among owners of STs and Amigas. Not surprising, and sure to warm the hearts of Atari and Commodore, but it's not all that useful if the cause of 16 bit computing is to advance. The more software available in both formats, the larger the potential audience; the larger the audience, the more machines will be sold and the more software will be produced for them. So the snowball rolls, crushing chickens and eggs in its path (!?!), until there's enough variety in the market to satisfy all tastes.

Amiga owners often quote the machine's high quality graphics and synthesizer-style sound chip as far superior to the ST. ST owners counter with their machine's MIDI interface, mono screen option and operating system in ROM. These old chestnuts continue to bounce back and forth, but there's a lot more in common between the two machines than there is separating them.

OK, so a little competition is a good thing, but here at ST Amiga Format we're committed to both machines. We think the ST and the Amiga are *both* superb computers which offer home and business users the best value-for-money deal that there has ever been in the micro marketplace. We'll continue to point out the strengths and weaknesses of each machine for specific applications, but together they leave the rest standing.

MUSIC

INTO THE MIDI 60

The music standard which has tied together instruments from all sorts of manufacturers – a full survey of the scene, where to go and what to buy.

TECHNOPHILE

LEARN BASIC 76

Get programming with HiSoft's Power BASIC, as seen on this month's cover disk, and Amiga BASIC too.

DEVPACS ON TEST 80

HiSoft aim to ease the burden for programmers. We check out Devpac Amiga and the brand new enhanced ST version, Devpac 2.

DESKTOP 84

The best tips and wrinkles you're ever likely spot for your ST. Nothing whatever for Amiga users in these pages – sorry folks.

WORKBENCH 86

Tips, tricks and Intuition to speed the use of your cuddly Amiga. Not suitable for ST users – sorry again.

ATARI
THE LEADING NORTH WEST SPECIALIST ATARI DEALER

LADBROKE COMPUTING INTERNATIONAL

33 Ormskirk Road,
Preston, Lancs, PR1 2QP.
Tel: (0772) 21474 (1 line)
(0772) 203166 (5 lines)
Bul/Board (0772) 27236
6.00pm to 9.00pm

DEALER ENQUIRIES WELCOME

HARD DISKS

Atari	20mg	£575
Supra	20mg	£575
Triangle	20mg	£499
Triangle	40mg	£699

PRINTERS

9 Pin D/M

Star LC10	£225
Star LC10 Colour	£275
Citizen LP10	£199

24 Pin D/M

NEC 2200	£429.99
Epson LQ500	£429.99
Star LC10/24	£429.99
Epson LQ800	Phone

Daisy Wheels

Gachen	£199

Laser Printers

Atari SLM804 Laser	£1350
Star Laser	£2399

The Star Laser Price Includes 12 months On Site Warrenty
The Atari Includes 90 day Warranty
All Printers Come Complete With Cables ETC.
Interfaces Are Seperate

UPGRADES

Upgrades are available from stock. 2.5 and 4 Mg upgrade boards are available to fit the old 520 STFM boards only.

Upgrade boards	£135
Boards + 2.5 Mg	Phone
Boards + 4 Mg	Phone
1 Mg STFM (fitted)	£105
1 Mg STFM (Kit)	£90
STFM Upgrade fitting service.	£15

If any of the above Upgrades are purchased with Hardware then deduct £5 from total. Prices will be held as long as possible.

Our Atari trained engineers will repair all hardware in minimum time at competitive rates.

PERIPHERALS

Triangle 1 Mg drive	£119
Cumana 1 Mg drive	£109
Pro Draw Graphics Tablet	Phone
Image Scanner	£89
Hawk Scanner	£1250
CRP Digi Tablets	
A4	£414
A3	£818

ATARI HARDWARE

520 STM's Phone for availability

520 STFM's Summer Pack

520 STFM + 1 Mg internal drive + joystick + over £400 of latest release software for only £399
1040 STF's £480
While stocks last.
External Modulators for the 1040 STF's £54.99
SM124 mono monitor £139
SC1224 colour £375

Commodor Amiga 500 pack £38

Philips 8883 colour monitor £299
Tv's and others phone
Any of above bought with a computer Deduct £10

BUSINESS SYSTEMS

MEGA ST 2
2048K CPU+3.5" Floppy Drive + SM124 Mono Monitor.
.....£1034.99

MEGA ST 4
4096k CPU+3.5" Floppy Drive+ SM 124 Mono Monitor.
.....£1379.99

DTP SYSTEM I
Mega ST 2
SLM 804 Laser Printer
Additional 3.5" Floppy Drive.
SM 124 Mono Monitor.
DTP Software.
.....£2874.99

DTP SYSTEM 2
Mega ST 4.
SLM 804 Laser Printer.
SH205 20Mg Hard Drive.
SM124 Mono Monitor.
DTP Software.
.....£3449.99

PC2 SD
512k CPU+5.25 Floppy Drive+PCM 124 Mono Monitor.
.....£689.99

PC2 DD.
512k CPU + 2x5.25 Floppy Drive + PCM 124 Mono Monitor
.....£747.49

PC2 HD
512k CPU + 5.25 Floppy Drive + 30Mg Hard Drive + PCM 124 Mono Monitor.
..... £1092.49

DUST COVERS

Computers	£3.99
Monitors	£4.99
Disk Drives	£2.99
Hard Disk	£4.99
Printers	£7.99

DISKS

	3.5 D/S D/D	5.25D/S D/D 96TPI
Each	£1.50	£0.70
x10	£14	£6.50
x10 + Plastic Lib. case	£15.50	£8.00
x100 + case	£140	£70
x500 + cases	£650	£330

All Disks are Top Quality SONY products and are covered by an unconditional liftetime guarantee.
We also stock High Quality VHS Video tapes.

Each	£2.99
For 2	£5.80
For 4	£11.40
For 10	£26.00

We also stock a full range of quality P/D ST Software at £3.99 per disk.

Send S.A.E for catalogue.

MUSIC

We stock Music Software and Hardware for the ST including a range of AKAI samplers and synths.
Suitable for Hobbyist and Professional applications

UTILITIES AB ANIMATOR £14.99

Animated Graphics Tool for the ST.
Supports GFA and FAST Basics.
Compatible with DEGAS and NEOCHROME files.
Full Facilities such as Draw, Fill, Grid Copy etc Includes FREE basic routines and demo progs.

PICSTRIP £6.99

Full screen picture manipulator.
Supports GFA, FAST and ST BASICs.
Compatible with DEGAS, NEOCHROME and AB ANIMATOR.
Grab all or part of a picture in all resolutions.

QUICK LIST PLUS & MASTERMAT £6.99

Directory Database Compiler with customised format and copy protect prog on same disk.

EDUCTIONAL SPELL AND ADD WITH OSCAR £12.99 EACH

Spell teaches keyboard skills, spelling and motor coordination while Add teaches addition, subtraction, multiplication, and division.

TO ORDER Simply send, or phone your order, stating full name, address, VISA or ACCESS No's, Cheque or Money Order.
Make payable to:
LADBROKE COMPUTING INTERNATIONAL.
SEND SAE FOR FULL CATOLOGUE.

Our mail order dept. gives the same excellent service to our cutomers as our premises at the above address has done for the past 8 years. All Software/Hardware has been tested prior to delivery thus ensureing that customers receive working items and the frustration of returning faulty goods is now a thing of the past.
This kind of quality service does cost a little more but in the long run it is far cheaper.
All prices fully inclusive of VAT, Delivery, there are NO hidden extras. WYSIWYG.
For next day delivery add £3. Prices correct at time of going to press.

NEWS

BASIC 3 from GFA

GFA's new BASIC 3 interpreter for the ST is due to hit the streets in mid-July. Version 2 has already established itself as a major contender for the most popular alternative to standard ST BASIC, and BASIC 3 opens up the language with additional structures, improved editing and error correction, and many more graphics commands including better control of GEM.

The new interpreter, marketed in this country by Glentop at £65, boasts a whole stack of new features and keywords. These include new commands like CASE and ENDSELECT, and extensions to existing commands, such as ELSEIF and OTHERWISE. Multi-line funtions are now also supported.

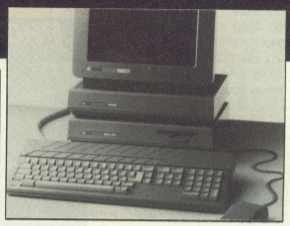
On the editing side, revisions to the editor, tracing functions and the addition of DUMP (which lets you dump the contents of variables and arrays) all aid program creation and debugging. New data types, borrowed from the world of Pascal and Modula 2, help to tie down data structures, and there are also new commands for direct bit level manipulation.

The graphics side of the program has also been upgraded with new Logo-style turtle graphics commands and better access to GEM for manipulation of windows, pull-down menus and dialogue boxes. Version 3 is claimed to be fully compatible with version 2 and should run earlier programs without change.

A Version 3 compiler and an Amiga version of the interpreter are also being written, but won't be available for some months to come.

■ *Glentop, 1 Bath Place, Barnet, Herts EN5 5YE (01-441 4130)*

Major business push for Atari



Atari are set for an onslaught on the micro business market with the launch of seven new products squarely aimed at the serious user. The new range will be coming out under the 'Hyper' banner, and is geared up for launch before the end of September this year. Three quarters of them are UK-originated products.

Bob Katz, Atari's Technical Director commented, "We're aiming these products particularly at the Mega ST user, but they'll all work on the 520 up." All the products are designed to run directly under GEM, making full use of features like multiple fonts and common device drivers to try for a 'Mac-like' user interface. They will be marketed directly by Atari.

The first two products, both of which should be available by the time you read this, are *Microsoft Write* (the only one not under the Hyper- label) and *HyperPaint*. *Write* is a top flight word processor with a full spell checker and the ability to import graphics. *HyperPaint* is described as a professional painting program with some revolutionary features: among these are the ability to zoom and edit a picture at 300 dpi resolution (that's the quality of a laser printer), to automatically filter 'noise' from scanned images, and to handle a picture of any size, limited only by the amount of memory in your ST. Presumably a 4Mb Mega ST can easily handle billboards! Anti-aliasing is used to smooth the edges of lines and objects.

Other hyper products close to completion include *HyperChart*, a port of Davrelle's award-winning chart creation program from the PC and *HyperDraw*, an object-oriented drawing program similar to EasyDraw but with an improved user interface. *HyperPlan* is a spreadsheet which was first shown at the Hanover fair to much acclaim. It is compatible with the industry standard Lotus 1-2-3, but with an improved working style close to that of MicroSoft's Excel.

The final two products planned are the *HyperSomething* database (no finalised name!) and *HyperProject* project planner. HyperSomething will offer similar functions to Superbase Professional, and will be able to store graphics and *sounds* in its records. Now if it can interface to MIDI that *will* be interesting....

■ *Atari, Railway Terrace, Slough, Berks SL2 5BZ (0752 33344)*

Amiga animation competition

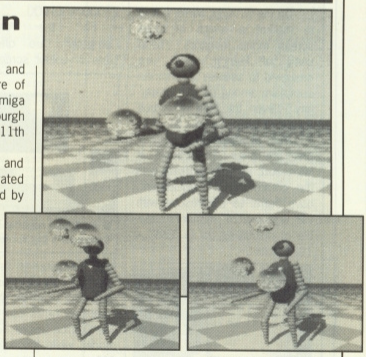
The Edinburgh Festival is not all Joan Bakewell and Tattoos this year. In amongst the standard fare of African drummers and Balkan poets The Amiga Centre Scotland will be hosting the first Edinburgh Festival Computer Animation Competition, from 11th to 20th August.

The competition, to accompany a workshop and exhibition, is to find the best animation generated using an Amiga. The first prize is being provided by Commodore themselves, an Amiga 500 or Commodore hardware to the same value. Other sponsors include the Disc Company, who'll be giving away various software products such as Imagine, a new 3D animation package, and Kind Words, their word processor.

There are no pre-defined categories and entries can be made on disk or PAL video tape. You don't have to travel to Edinburgh in person, although if you don't you'll be missing a cultural bonanza!

Animation competitions are big business in the States – the curiously named Badge Killer Competition held in October last year at Stanford University resulted in some truly amazing demos for the Amiga turning up. Now is the chance for you to help prove that UK programmers can beat the best the US has to offer any day!

Among the names who have expressed interest are Eric Graham, author of Sculpt-3D, Animate-3D and the classic Juggler demo; Martin Hash, author of animator Apprentice; and Joel Hagen, winner of the aforementioned Badge Killer contest. The judges will be professional graphic designers and animators from the world of TV and films.



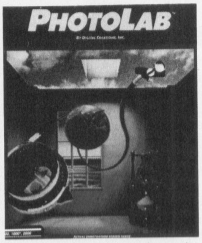
■ ***Can you beat Juggler, Eric Graham's classic Amiga animation?***

Closing date for finished entries is 1st August, so you'd better hurry. There's no entry fee.

■ *Further details from Iain Anderson, Animation Competition, The Amiga Centre Scotland, 4 Hart Street Lane, Edinburgh E1 3RN (031-557 4242)*

NEWS

Deluxe Photolab processes HAM



The latest in the Deluxe series of graphics programs from Electronic Arts boasts the ability to print your favourite Amiga art in sizes up to 3 metres square (!). Deluxe Photolab, a snip at £69.95, operates in any of the Amiga's screen modes, including the 4096 colour HAM mode. The program can handle images up to 20 times the size of an Amiga screen, limited only by available memory, and can support two screens simultaneously, even allowing cut and paste between the two.

Deluxe Photolab offers a host of painting tools, such as four point curves, adjustable airbrushes and anti-aliasing (which even takes effect on printing, to the resolution of your printer). The package claims to offer full control over the colour palette, including colour merging, pixel population counts and colour separations. Included in these special techniques is a function to convert images from any Amiga screen mode to any other.

■ *Electronic Arts, 11/49 Station Road, Langley, Berks SL3 8YN (0753 46465)*

Big screens, fancy fonts

When it comes to displays, 'Big Is Beautiful' seems to be the order of the day on both Amiga and ST. New add-on screens for both machines could be just what your tired eyes are crying out for – at a price!

On the ST side, Mirrorsoft is to market a range of large screen mono monitors. These units, of French origin, are designed to address a common complaint among the DTP fraternity – even the high resolution mono screen on an ST isn't capable of displaying a complete A4 page. The people at Mirrorsoft, used to working with the cream of DTP equipment, have come to the rescue with 17", 19" and 24" monitors capable of displaying up to 1280 x 1024 pixels.

■ *An ST with Megavision*

Your standard ST screen remains active alongside the Megavision, and special software allows you to displaying the output of different programs on each screen – a word processor and a DTP, for instance. You can also use one monitor to enlarge any section of the other and call up the GEM menu from any point on the Megavision screen. Prices range from £1000 to £1600.

For the Amiga, Tri Computers are offering two sizes of colour screen in either long persistence (suitable for interlace mode displays) or Multisync configurations (with scanning rates up to 40kHz). The Coltron Sword 37 is the 14" model, while the 5140 is a full 20" screen capable of displaying a complete A3 page (or A4 spread). Prices start at £747.50 for either of the small screen models rising to a cool £2070 for the true Mega screens.

■ *An Amiga running Tri Computer's big screen.*

■ *Mirrorsoft, Headway House, 66-73 Shoe Lane. London EC4P 4AB (01-377 4761)*

■ *Tri Computers, 161-169 Uxbridge Road, Ealing, London*

Brief briefs

Frontier Software (0423 67140), importers of the Supra range of hard disk drives for the ST, have announced price cuts across their entire range. The 20 Mbyte drive is cut by £50 from £599.95 to £549.95 while the 60 Mbyte version drops from £1499.95 to £999.95.

Roundhill (0672 54675) have version 4.0 of Lattice C available for the Amiga at £115 and **Metacomco** (0272 428781) can supply the Lattice compiler companion with loads of useful utilities for use with C, BASIC, Modula-2, Pascal, or Assembler. The companion costs £86.25.

Newday (01-948 2516), have introduced a video digitiser for the Amiga which can digitise up to four images in RAM in real-time and save them in standard IFF format. It normally uses 16 grey scales but has an optional 32 scale mode for increased quality.

Mirrorsoft (01-377 4837) have developed a special version of Fleet Street Publisher ST to interface to the Linotron 202 phototypesetter. If you happen to have a 202 at home (they cost £10,000-ish), FSP for it goes for an undisclosed sum.

Kuma (07357 4335) have released K-Gadget (£29.95), a quaintly named Amiga programmer's toolkit. It aims to help you design complex requesters and gadgets in C source code.

George Thompson Services (077 082 234) have signed up the rights to two German Amiga utilities. Int-Switch (£9.99) is a program to disable expansion RAM and bridgeboard. It survives a warm boot, so is needed for some games that fall foul of expansion RAM. TurboPrint (£29.99) is a high speed printer driver and screen dumper for all screen modes and printer types, lasers included.

You'll believe a game can fly!

Tynesoft, best known for their shooting, fencing and diving game **Summer Olympiad** (known in the States as *Summer Challenge* since 'Olympiad' is too complex a concept) have tied up a licence with DC Comics. DC, purveyors of all things Super, are apparently keen to get into the software market and Tynesoft are working closely with a US software house to have *Superman*, the game, ready for the Autumn. Or should that be Fall.

■ *Faster than a speeding bullet, but still unlikely to reach us before September.*

clik AMIGA SPECIALISTS

Unit 1, Willowsea Farm, Spout Lane North
Stanwell Moor, Staines. Middx TW19 6BW
Telephone: (0753) 682988

TITLE	HOUSE	S.S.P.	OUR PRICE
Aaargh	Melbourne House	19.99	13.50
Adventure Con Set	Electronic Arts	24.95	20.50
Alien Strike	Diamond	24.95	16.50
Amegas	Pandora	14.95	10.25
Annals of Rome	P.S.S.	24.99	16.50
Arazoks Tomb	Aegis	29.95	19.50
Arcade Classics	Robtek	19.99	13.50
Arkanoid	Discovery	26.00	16.00
Armageddon Man	Nartek	19.99	14.50
Artic Fox	Electronic Arts	29.99	20.50
Backgammon	Robtek	9.99	7.00
Backlash	Novagen	19.99	13.50
Bad Cat	Rainbow Arts	19.99	13.50
Balance of Power	Microsoft	29.99	19.50
Barbarian	Palace	24.99	16.50
Bards Tale 1	Electronic Arts	24.95	17.50
Battleships	Elite	19.99	13.50
Beyond Zork	Infocom	24.99	16.50
Black Lamp	Firebird	19.99	13.50
Black Academy	Microillusions	19.99	13.50
B.M.X Simulator	Codemaster	14.99	10.25
Bubble Bobble	Firebird	19.99	13.50
Buggyboy	Elite	24.99	16.50
Chess, The Art Of	S.P.A.	24.95	16.50
Chessmaster 2000	Electronic Arts	24.99	17.50
City Defence	Anco	14.95	10.25
Computer Hits	Beau Jolly	29.99	19.50
Crack	Linel	19.95	13.50
Crazy Cars	Titus	24.95	16.50
Dark Castle	Mirrorsoft	24.99	16.50
Deep Space	Psygnosis	24.99	16.50
Defender of the Crown	Mirrorsoft	29.99	19.50
Deja Vu	Mindscape	29.99	19.50
Division One	Robtek	19.99	13.50
Eagles Nest	Pandora	19.99	13.50
Earl Weaver Baseball	Electronic Arts	24.99	17.50
Ebonstar	Microillusions	24.95	16.50
ECO	Ocean	24.99	16.50
Elf	Tynesoft	14.99	10.25
Emerald Mines	Anco	19.99	13.50
Englightment (Druid II)	Firebird	19.99	13.50
Eye	Endurance	14.95	10.25
Fairy Tale Adventure	Microillusions	49.99	32.50
Ferrari Formula One	Electronic Arts	24.95	17.50
Feud	Mastertronics	9.99	7.00
Fireblaster	Prism	9.99	7.00
Firepower	Microillusions	24.95	16.50
Flight Simulator II	Sublogic	39.99	26.50
Flintstones	Grand Slam	19.95	13.50
Football Fortunes	C.D.S.	24.95	16.50
Football Manager II	Addictive	19.99	13.50
Formula Grand Prix	Microvalue	14.95	10.25
Frostbyte	Microvalue	14.95	10.25
G.F.L. Football (U.S.F. Ball	Gamestar	24.95	16.50
Garrison	Rainbow Arts	24.95	16.50
Garrison II	Rainbow Arts	24.95	16.50
Gee Bee Air Rally	Activision	19.99	13.50
Gettysburg	S.S.I.	29.99	19.50
Giganoid	S.C.A	14.95	10.25
Gnome Ranger	Level 9	14.95	10.25
Golden Path	Firebird	19.99	13.50
Grand Slam Tennis	Paradox	14.99	10.25
Guild of Thieves	Rainbird	24.99	16.50
Hard Ball	Accolade	24.95	17.50
Hichhikers Guide/Galaxy	Infocom	29.99	19.50
Impact	A.S.L.	14.95	16.50
Indoor Sports	Databyte	24.99	16.50
Interceptor	Electronic Arts	24.95	17.50
Jet	Sublogic	39.95	25.50
Jinx	Rainbow Arts	24.99	16.50
Jinxter	Rainbird	24.95	16.50
Joe Blade	Players	9.99	7.00
Kampfgruppe	S.S.I.	29.95	19.50
Karate	Paradox	19.99	13.50
Karting Grand Prix	Anco	9.99	7.00
Kikstart II	Mastertronics	9.99	7.00
Kings Quest III	Sierra	24.99	16.50
Kings Quest Pack (inc I-III)	Sirrera	24.99	16.50
Leaderboard	U.S. Gold	24.99	16.50
Leather Nun of Phobus	Infocom	29.99	19.50
Leathernack	Microdeal	19.99	13.50
Leathernack 4 Player Adpt	Microdeal	5.95	4.50
Leisure Suit Larry	Sierra	24.99	16.50
Marble Madness	Electronic Arts	19.99	14.50
Mean 18	Accolade	24.99	17.50
Mercenary Compendium	Novagen	24.99	16.50
Mindfighter	Abstract	24.99	16.50
Mission Elevator	Reline	19.99	13.50
Moonmist	Infocom	29.99	19.50
Ninja Mission	Mastertronics	9.99	7.00
Obliterator	Psygnosis	24.99	16.50
One on One	Ariolasoft	29.99	19.50
Othello	Robtek	9.99	7.00
Passenger of the Wind	Gienet	24.99	16.50
Pawn	Rainbird	24.99	16.50
Peter Beardsleys Football	Grandslam	19.95	16.50
Phantasie III	S.S.I.	24.99	16.50
Pinball Wizard	Kingsoft	9.99	7.00
Pink Panther	Magic Bytes	19.99	13.50
Plutos	Mastertronics	14.95	10.25
Pool	Masteronics	9.99	7.00
Ports of Call	Aegis	39.99	25.50
Power Struggle	P.S.S.	14.99	10.25
Protector	Prism	9.99	7.00
Red October	Argus Press	24.99	16.50
Return to Atlantis	Electronic Arts	24.99	17.50
Rockford	Melbourne House	19.99	13.50
Romantic Encounters	Microillusions	24.99	16.50
S.D.I.	M indcraft	29.99	19.50
Scenery Disc 7	Sublogic	24.99	16.50
Scenery Disc 11	Sublogic	24.99	16.50
Scenery Disc Europe	Sublogic	19.99	13.50
Scrabble II			
Sentinel	Firebird	19.99	13.50
Seven Cities of Gold	Electronic Arts	14.99	10.25
Shadowgate	Mindscape	24.99	16.50
Shanghai	Activision	24.99	16.50
Sherlock	Infocom	24.99	16.50
Sidewinder	Mastertronics	9.99	7.00
Silent Service	Microprose	24.99	16.50
Sinbad and Throne/ Falcon	Mindscape	29.99	19.50
Soccar Supremo	Grysys	19.99	13.50
Space Port	Reline	19.99	13.50
Space Quest	Sierra	29.99	19.50
Space Ranger	Mastertronics	9.99	7.00
Space Station	Prism	9.99	7.00
Star Glider	Rainbird	24.99	16.50
Star Wars	Domark	19.99	13.50
Starfleet 1	Interestel	24.95	16.50
Steller Conflict	P.A.R.	26.50	19.50
Stir Crazy (Bobo)	Infogrames	19.99	13.50
Stock Market	Tynesoft	19.99	16.50
Strike Force Harrier	Mirrorsoft	24.99	16.50
Strip Poker I	ANCO	9.99	7.00
Strip Poker II	ANCO	14.99	10.25
Surgeon	I.S.M.	49.99	31.50
Swooper	Robtek	19.99	13.50
Temple of Apshai	U.S. Gold	24.99	16.50
Terramex	G.S.E.	19.99	13.50
Terrapods	Psygnosis	24.99	16.50
Test Drive	Electronic Arts	24.99	17.50
The Jewels of Darkness	Rainbird	19.99	13.50
Three Stooges	Mirrorsoft	29.99	19.50
Time and Magik	Level 9	19.95	13.50
Time Bandits	Microdeal	19.99	13.50
Ultima III	Origin	24.99	16.50
Unvited	Mindscape	29.99	19.50
Vampire Empire	Magic Bytes	19.99	13.50
Warzone	Prism	9.99	7.00
Western Games	Magic Bytes	19.99	13.50
Winter Olympad	Tynesoft	19.99	13.50
Witness	Infocom	29.99	19.50
Wizball	Ocean	24.99	16.50
World Darts	Mastertronics	14.99	10.25
World Games	Epyx	24.99	16.50
World Tour Golf	Electronic Arts	24.95	17.50
Xenon	Melbourne House	19.95	13.50

SPECIAL OFFERS WHILE STOCKS LAST

TITLE	HOUSE	S.S.P.	OFFER PRICE
Black Shadow	C.R.L.	24.95	15.50
Blastball	Mastertronics	9.99	5.50
Borrowed Time	Activision	24.99	15.50
Brainstorm	Robtek	9.99	5.50
Casiono Roulette	C.D.S	19.99	12.50
Challenger	ANCO	9.99	5.50
Cougans Run	Softgang	14.99	9.50
Cuthroats	Infocom	29.99	12.00
Deadline	Infocom	29.99	12.50
Demolition	ANCO	9.99	5.50
Destroyer	Epyx	24.99	15.50
Diablo	Robtek	19.99	12.50
Extensor	Players	9.99	5.50
Eye	Endurance	14.99	9.50
Final Trip	ANCO	9.99	5.50
Flight Path 737	ANCO	9.99	5.50
Footman	Topdown	24.95	15.50
Galactic Invasion	Microillusions	24.99	15.50
Goldrunner	Microdeal	24.95	15.50
Grid Start	ANCO	9.99	5.50
Hacker	Activision	29.99	12.00
Hacker II	Activision	29.99	12.00
Hollywood Poker	Robtek	19.99	12.50
Insanity Flight	Microdeal	24.99	12.50
Jigaw Mania	Robtek	9.99	5.50
Jump Jet	ANCO	14.99	9.50
Karate Kid II	Microdeal	24.99	15.50
King of Chicago	Mirrorsoft	29.99	18.50
Knight Orc	Rainbird	24.99	12.50
Kwasimodo	Robtek	9.99	5.50
Las Vegas	ANCO	9.99	5.50
Leviathan	English	19.99	12.50
Mach 3	Loriciels	19.99	12.50
Mindshadow	Activision	24.99	12.00
Moebius	Origin	24.95	15.50
Nord and Bert	Infocom	24.99	15.50
Orge	Origin	24.95	15.50
Phalanx	ANCO	9.99	5.50
Q Ball	English	19.99	12.50
Roadwar	Melbourne House	19.99	12.50
Rockey	Robtek	9.99	5.50
Rolling Thunder	U.S. Gold	24.99	15.50
Seastalker	Infocom	29.99	12.00
Seconds Out	Tynesoft	19.99	12.50
Silicon Dreams	Microprose	24.99	15.50
Skyfighter	ANCO	14.99	9.50
Slayyon	Activision	29.99	12.00
Space Battle	ANCO	9.99	5.50
Spellbreaker	Infocm	29.99	12.00
Starcross	Infocom	29.99	12.00
Starways	Robtek	19.99	12.50
Stationfall	Infocom	29.99	12.00
Strange New World	Timewarp	29.99	12.00
Tass Times	Activision	29.99	12.00
Tetris	Mirrorsoft	19.99	12.50
Thai Boxing	ANCO	9.99	5.50
The Wall	Timewarp	14.99	9.50
Thunderboy	Timewarp	14.99	9.50
Vaders	ANCO	9.99	5.50
Vyper	Topdown	14.99	9.50
Winter Games	Epyx	24.99	12.50
Wishbringer	Infocom	29.99	12.00
XR35 Fighter	ANCO	9.99	5.50
Zork I	Infocom	29.99	12.00
Zork II	Infocom	29.99	12.00
Zork III	Infocom	29.99	12.00

THIS OFFER APPLIES ONLY WHILE PRESENT STOCKS LAST PLEASE CHECK AVAILABILITY

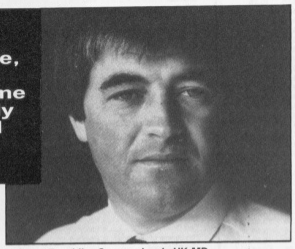
TITLE	HOUSE	S.S.P.	OUR PRICE
A.C./Basic	Absoft	195.00	132.50
AC Fortran		295.00	202.50
Adrum	Bullrog	39.99	32.50
Analyse II	M.S.S.	69.95	49.50
Animator/Images	Aegis	103.50	75.50
Arts Part 1	Electronic Arts	9.99	7.50
Arts Part 2	Electronic Arts	9.99	7.50
Audio Master	Aegis	46.00	32.00
Butcher	Eagle Tree	29.95	21.50
C.Library	Benchmark	79.99	60.50
Calgrapher	Interactive	69.95	50.50
City Desk	S.I	114.95	85.00
C.L.I. Mate	P.P.S.	39.95	29.50
Deluxe Music Con Set	Electronic Arts	69.99	50.50
Deluxe Paint II	Electronic Arts	69.95	50.50
Deluxe Print	Electronic Arts	24.95	18.50
Deluxe Productions	Electronic Arts	139.95	115.00
Deluxe Video (PAL)	Electronic Arts	69.95	50.50
Diga	Aegis	57.50	42.50
Digipaint	Newtek	59.95	42.50
Digiview 2.0	Newtek	149.95	105.00
Digiview Adapter	Newtek	22.95	19.50
Director	The Right Answer	59.95	45.50
DOS2 DOS	Central Coast	39.95	29.50
Express Paint	P.A.R.	69.95	50.50
Flipside	M.S.S.	29.95	21.50
Futuresound	Applied Visions	175.00	155.00
Grabbit	Discovery	29.95	21.50
Hai Calc	Hatex	59.95	42.50
Hot & Cool Jazz	Electronics Arts	9.99	7.50
I.F.F. Library	Benchmark	79.99	60.50
Instant Music	Electronic Arts	69.95	50.50
Intelletype	Electronic Arts	29.95	21.50
Intro CAD	P.P.S	59.95	42.50
K.Sega Assembler	KUMA	49.95	32.50
Kara Fonts	Kara	59.95	45.50
Lattce C 4.0	Lattice	172.50	122.50
Lisp	Metacomco	149.95	102.50
M.C.C. Pascal	Metacomco	89.95	69.50
Macro Assembler	Metacomco	69.99	50.50
Marauder II	Discovery	39.99	29.50
Maxiplan A500	OXXI	99.95	72.50
Maxiplan Plus	OXXI	149.95	102.50
Microfiche Filler	S.V	79.95	62.50
Modula II	Benchmark	139.95	102.50
Music Studio	Activision	34.99	24.50
On Line	M.S.S.	110.95	99.50
Organize II	M.S.S.	69.95	50.50
Photon Paint	Microillusions	69.99	50.50
Pixmate	P.P.S	49.95	39.50
Prism	Impulse Inc	59.95	45.50
Pro Board	Prolific	475.00	375.00
Pro Net	Prolific	475.00	375.00
Pro Sound Designer	Eidorsoft	34.99	29.50
Pro Video		159.95	127.50
Professional Page	Gold disk	249.95	175.00
Publisher Plus	North East	99.50	72.50
Rock 'n' Roll	Electronic Arts	9.99	7.50
Scribble II	M.S.S.	49.95	39.50
Sculpt 3D	Byte by Byte	85.00	69.50
Sculpt 3D Animate	Byte by Byte	139.95	105.00
Seasons an Holidays	Electronic Arts	9.99	7.50
Shakespear	Infinity	129.95	85.00
Shell	Metacomco	49.95	34.50
Silver	Impulse	139.95	115.00
Simp Library	Benchmark	79.95	60.50
Sonix	Aegis	57.50	39.50
Superbase	Precision	89.95	72.50
Superbase Professional	Precision	249.95	185.00
T.V. Show	Zuma	69.99	50.50
T.V.Text	Zuma	69.99	50.50
The Works	M.S.S.	149.99	105.00
Tool Kit	Metacomco	39.95	29.50
Video Titler 1.1	Aegis	110.00	85.00
Videoscape3D	Aegis	143.75	110.00
Word Perfect 4.10	Word Perfect	228.85	175.50
X CAD		460.00	325.00
Zuma Fonts 1	Zuma	34.95	24.50
Zuam fonts 2	Zuma	34.95	24.50
Zuma Fonts 3	Zuma	34.95	24.50

HARDWARE PRICE LIST

ITEM	S.S.P.	OUR PRICE
A500 Computer Built in 31/2" Disk Drive Amiga DOS Kickstart, Workbench, "The Very First"	399.99	350.00
A500 (as above) with 1084 Colour monitor	699.99	620.00
A500 (as above) with Printer	804.99	750.00
1084 Colour Monitor	349.99	325.00
Citizen Printer	228.85	210.50
A520 T.V. Modulator	24.99	22.50
A501 512K R.A.M Expasion Pack Plus Battery Backed Clock	119.99	112.50
B2000 Computer	1295.25	1150.50
B2000/C with 1084 Colour Monitor	1321.53	1268.50
2nd External Disc Drive for A500		105.00
Disc Boxes (Holds 40 Discs)		10.50
Discs Boxes (Holds 90 Discs)		12.50
Mouse Mats		5.00
Pro 5000 Joysticks		14.99
Ram Delta Joysticks		9.99
Alsop Universal Printer Stand		10.99
Citizen 120D Printer Ribbons		3.50
Box of 10 Blank Discs in Box		6.99
Disc Drive Head Cleaners		9.95

Hard Sell, Soft Sell

The Commodore Show disrupted traffic around Hammersmith early in June, but *ST Amiga Format*, like most sensible punters, came by Tube. We found a quietly confident Commodore and plenty of others out to sell their wares.



■ *Steve Franklin, Commodore's UK MD*

Computer shows are a function of the micro scene you grow to love and hate. On the plus side they're one of the few places you can pick up first hand news, gossip, slander and free food – if you've got a magic hack's pass. Against that, they make you sweat, oblige you to laugh a lot at the poor jokes of PR companies and take several miles of wear of the soles of your shoes. On balance it really depends what you get to hear...

Look, no Hans

Christian Andersen, Commodore's European supremo, headed up their 'very passable' champagne breakfast (their PR company's words, not ours) and was full of how Commodore had survived the last two lean years and were now poised to invest over £5 million in promoting the Amiga as a 'leisure computer'.

Andersen ended the intense speculation by confirming a £100 cut in the price of the A500, bringing it into line with the Atari ST 520 at £399. Dealers and potential users alike have been lobbying Commodore for this reduction, which should put the cat among the pigeons over the summer months.

Andersen was at pains to stress, however, that the price cut is only the first stage in a major drive throughout Europe, which now accounts for 60% of Commodore's worldwide sales. Commodore claim 600,000 sales worldwide, of which 40,000 in the UK is the official figure.

Flanking the man from Munich were the company's UK head, Steve Franklin, and Dean 'he's in a meeting' Barrett, their elusive Marketing Manager. Franklin was keen to highlight the top of the range 68020 Amiga 2500, which he said would boast a three-partition hard disk capable of running AmigaDOS, MS-DOS and Unix. Before you reconsider your A500 purchase, though, it's worth mentioning that the likely price is around £7000 and that it's expected to have the performance of a VAX mini-computer.

■ *Commodore UK, The Switchback, Gardner Road, Maidenhead, Berks SL6 7XA (0628 770088)*

AAAE!

Not the noise you might make after hearing the price of the A2500, but the name of some very impressive software from Ariadne currently on test with, among others, British Aerospace, Warton, Lancs, as part of their Tornado Aircraft Ground Crew training system. The software package gives you complete control over a variety of laser disc players, the best-known of which being the Philips model. The laser disc is linked to the Amiga as a completely new device and can be accessed through the software to provide instantaneous control of its running.

With the Ariadne Amiga Application Environment (AAAE) Video Player Device you can control a laser disc directly from an iconic control panel which appears over the top of the video output on your screen. You can loop, freeze, forward and backtrack the display and jump instantly to any part of the disc. The software is priced for the professional (that means someone with loadsa-money) at £402.50; if you're still in the running, remember you'll also need a laser disc, costing around £1200.

■ *Ariadne 273 Kensal Road, London W10 5DB (01-960 0203)*

■ *Ariadne's Hanafi Houbart and the AAAE video device*

Burocare bonanza

As always, the punters love sexy hardware. One stand which seemed jam-packed with wizzo gadgetry was Burocare's – of perhaps greatest interest to Amiga users was the removable hard drive system. For £1035 you get a 5.25" hard drive with a respectable access time of 40ms. The advantage of this system, though, and what the company obviously hopes will justify the extra £300 over the cost of a fixed hard disk, is that you can remove the 20 Mbyte cartridge and replace it with another, and another, and another. The only drawback other than the initial cost is that the cartridges cost £57.50 each. Still, for business use this may be acceptable.

Also on the Burocare stand were a real-time colour digitiser for £920 and the HP PaintJet colour ink-jet printer at a touch under £1000, capable of reproducing the Amiga's full 4096 colours.

■ *Burocare, 211 Kenton Road, Harrow, Middx HA3 0HD (01-907 3636)*

A life on the Ocean wave

Bars are wonderful places. A sense of the variety of life and the odd pint of invigorating ale. Pints in the Novotel are hardly that, but all in the line of duty we managed to keep one down long enough to chat to Gary Bracey of Ocean.

Apart from much time debating whether to buy an Amiga for the company "to assess the opposition's software", Bracey did manage to mention 'Operation Wolf', Ocean's forthcoming release which, we were assured, will be the 'Out Run' of 1988. The Amiga version will include graphics ported directly from the arcade machine and should be here in the Autumn, assuming the programmer can cut the code to fit onto less than the current 7 disks!

AMIGA AMIGOS

At times the Amiga's sophistication can be daunting, but two new titles from Abacus books may help to change all that.

Amiga Tricks & Tips is a collection of useful hints for all Amiga users. Among its topics are getting more from the Workbench and CLI, BASIC programming tips, creating icons, and help with many popular commercial applications. *Amiga Machine Language* aims to combine a beginners guide to 68000 programming with detailed machine information for experts. It covers controlling the screen and disk drives, gadgets, sound and mouse . Both books cost £12.95.

■ *Abacus books are distributed in the UK by Precision Software, 6 Park Terrace, Worcester Park, Surrey KT4 7JZ (01-330 7166)*

NEW LOW PRICE ST!

ST PRICE INCREASE

Due to a worldwide shortage of memory chips, prices of many computers have gone up. From April 1988, the Atari ST range is also likely to be affected. For details of any price increase, please return the coupon below for our latest literature.

ONLY FROM SILICA

Finally, there's a personal computer that not only solves problems like other computers, but also solves the one problem that other computers have created. Affordability. Silica Shop are pleased to present the ST range of personal/business computers from Atari. The ST was designed-utilizing the most recent breakthroughs in semiconductor technology, producing a personal computer that performs tasks with fewer parts. Which means it costs less to make. And less to buy. The latest ST computers now include built in power supplies and built in disk drives. The TOS operating system and GEM window environment are now on ROM chips which are already installed in the ST keyboard. This enables automatic instant booting when you switch on. Silica Shop are pleased to offer the complete Atari ST range. Our mail order department is situated in Sidcup and we have 3 retail outlets at Sidcup, Lion House (Tottenham Court Rd) and Selfridges (Oxford Street). We have eight years experience of Atari products, longer than any other UK company, and are well established as the UK's No.1 Atari specialist. With a group turnover of over £9 million and in excess of 80 staff, we can offer you unbeatable service and support. We provide several facilities which you will find invaluable during your Atari computing life and most of these facilities are available **ONLY FROM SILICA.** We suggest that you read through what we have to offer, before you decide where to purchase your Atari ST.

FREE STARTER KIT - Only From Silica

When you purchase any Atari ST keyboard, you will not only receive the best value for money computer on the market, but you will also receive the following from Atari Corporation as part of the package:

* *BASIC Language Disk* * *BASIC Manual* * *ST Owners Manual* * *TOS/GEM on ROM*

If you buy your ST from Silica Shop, you will also receive:

* *NEOchrome Sampler - colour graphics program* * *1st Word - Word Processor*

In addition, we at Silica would like to see you get off to a flying start with your new computer, so we have put together a special **ST STARTER KIT** worth over £100, which we are giving away **FREE OF CHARGE** with every ST computer purchased at our normal retail prices. This kit is available **ONLY FROM SILICA** and is aimed at providing users with a valuable introduction to the world of computing. We are continually upgrading the ST Starter Kit, which contains public domain and other useful software, as well as books, magazines and accessories all relevant to ST computing. Return the coupon below for full details.

DEDICATED SERVICING - Only From Silica

At Silica Shop, we have a dedicated service department of seven full time Atari trained technical staff. This team is totally dedicated to servicing Atari computer products. Their accumulated knowledge, skill and experience makes them second to none in their field. You can be sure that any work carried out by them is of the highest standard. A standard of servicing which we believe you will find **ONLY FROM SILICA.** In addition to providing full servicing facilities for Atari ST computers (both in and out of warranty), our team is also able to offer memory and modulator upgrades to ST computers.

1Mb RAM UPGRADE: Our upgrade on the standard Atari 520ST-M or 520ST-FM keyboard will increase the memory from 512K to a massive 1024K. It has a full 1 year warranty and is available from Silica at an additional retail price of only £86.96 (+VAT = £100).

TV MODULATOR UPGRADE: Silica can upgrade the 1040ST-F to include a TV modulator so that you can then use it with your TV set. This is an internal upgrade and does not involve any untidy external boxes. A cable to connect your ST to any domestic TV is included in the price of the upgrade which is only £46 (inc VAT). The upgrade is also available for early 520ST computers at the same price.

THE FULL STOCK RANGE - Only From Silica

We aim to keep stocks of all Atari related products and our warehouse carries a stock of over £½ million. We import many software titles direct from the USA and you will find that we have new releases in advance of many of our competitors. Unlike dealers who may only stock selected titles, we have the full range. In addition, we carry a complete line of all books which have been written about the Atari ST. A range as wide as ours is something you will find is available **ONLY FROM SILICA.**

AFTER SALES SUPPORT - Only From Silica

Rest assured that when you buy your ST from Silica Shop, you will be fully supported. Our free mailings give news of releases and developments. This will help to keep you up to date with new software releases as well as what's happening in the Atari market. And in addition, our sales staff are at the end of a telephone line to service all of your Atari requirements. If you purchase an ST from Silica and would like any technical advice, we have a full time technical support team to help you get the best from your computer. Because we have both the staff and the systems specifically dedicated to providing after sales service on Atari ST computers, we are confident that our users enjoy an exceptionally high level of support. This can be received **ONLY FROM SILICA.**

FREE CATALOGUES - Only From Silica

At Silica Shop, we recognise that serious users require an in-depth information service, which is why we mail free newsletters and price lists to our ST owners. These are up to 48 pages long and are crammed with technical details as well as special offers and product descriptions. Once you have already purchased an ST and would like to have your name added to our mailing list, please complete the coupon & return it to us. This information service is available **ONLY FROM SILICA.**

FREE OVERNIGHT DELIVERY - From Silica

Most orders are processed through our computer within 24 hours of receiving them. Most hardware orders are sent by the overnight GROUP 4 courier service FREE OF CHARGE to customers within the UK. This method helps to ensure minimum delay and maximum protection.

PRICE MATCH - Only From Silica

We hope that the combination of our low prices, FREE UK delivery service, FREE Starter Kit and FREE after sales support, will be sufficient to make you buy your Atari equipment from Silica Shop. If however, there is something you wish to purchase, and you find one of our competitors offering it at a lower price, then please contact our sales department, providing us with our competitor's name, address and telephone number. If our competitor has the goods in stock, we will normally match the offer (on a 'same product - same price' basis) and still provide you with our normal free delivery. We realise that we are not the only company who will match a competitor's price. However, if you come to us for a price match, you will also be entitled to our after sales service, including free newsletters and technical support. This makes our price match promise rather special, something you will receive **ONLY FROM SILICA.** We don't want you to go anywhere else for your Atari products. So shop at Silica, the UK's No1 Atari Specialist.

SIDCUP (& Mail Order) **01-309 1111**
1-4 The Mews, Hatherley Road, Sidcup, Kent, DA14 4DX

LONDON **01-580 4839**
Lion House (1st floor), 227 Tottenham Court Rd, London, W1P 0HX

LONDON **01-629 1234 ext 3914**
Selfridges (1st floor), Oxford Street, London, W1A 1AB

£260 +VAT=£299

SO MUCH FOR SO LITTLE!

There is nothing that can compare with the incredible value for money offered by Atari's 520ST-FM. For only £260 (+VAT=£299), you can purchase a powerful 512K RAM computer, with a 95 key keyboard (including numeric keypad), MIDI interface, GEM, a palette of 512 colours, mouse controller, and a 512K built-in disk drive. The 520ST-FM has a TV modulator built-in, and comes with a lead to allow you to plug it straight into any domestic colour television set. The mains transformer is also built-in to the keyboard, so there are no messy external boxes. You couldn't wish for a more compact, powerful and stylish unit. Atari ST computers are now firmly established in the UK, there are nearly 500 software titles already available for a wide variety of applications and the list is growing all the time. And that's not all. When you buy your new 520ST-FM (or any Atari ST computer) from Silica Shop, you will get a lot more, including a FREE Silica ST Starter Kit worth over £100. Read the ONLY FROM SILICA section on the left, to see why you should buy your new high power, low price 520ST-FM from Silica Shop, the UK's No1 Atari Specialists. For further details of the range of Atari ST computers and the FREE Silica ST Starter Kit, complete and return the reply coupon below.

ATARI 520ST-FM NOW ONLY £260 (+VAT=£299)

520ST-FM with 512K RAM & mono monitor £399 (inc VAT) **Upgrade from 512K RAM to 1024K RAM £100** (inc VAT)

ATARI 1040STF - NEW PRICE

We are pleased to announce a new reduced price point on the 1040ST-F which is now available for only £499 (inc VAT). The 1040 is a powerful computer with 1Mb of RAM and also includes a built-in 1Mb double sided 3½" disk drive. The 1040 has been designed for use on business and professional applications most of which require a high resolution monochrome or colour monitor. It does not therefore have an RF modulator for use with a domestic TV set. Modulators can be fitted for £49 (inc VAT).

1040ST-F Keyboard Without Monitor	*£499 (inc VAT)*
1040ST-F Keyboard + High Res SM125 Mono Monitor	*£599 (inc VAT)*

If you would like further details of the 1040ST-F, return the coupon below.

MEGA STs NOW IN STOCK

For the user who requires even more RAM than the 520 or 1040 ST's offer, the new MEGA ST computers are now available. There are two MEGA ST's, one with 2Mb of RAM and the other with a massive 4Mb. Both new computers are fully compatible with existing ST's and run currently available ST software. The MEGA ST's are styled as an expandable Central Processing Unit with open architecture and a detachable keyboard. They are supplied with GEM, a free mouse controller and all extras as with the 520 or 1040. Prices are as follows:

MEGA ST 2Mb Keyboard + CPU	*£899 (inc VAT)*
MEGA ST 2Mb Keyboard + CPU + SM125 Mono Monitor	*£999 (inc VAT)*
MEGA ST 4Mb Keyboard + CPU	*£1199 (inc VAT)*
MEGA ST 4Mb Keyboard + CPU + SM125 Mono Monitor	*£1299 (inc VAT)*

If you would like further details of the MEGA ST's, return the coupon below.

ATARI ST

To: Silica Shop Ltd, Dept STFM, 1-4 The Mews, Hatherley Road, Sidcup, Kent. DA14 4DX

PLEASE SEND ME FREE LITERATURE ON THE ATARI ST

Mr/Mrs/Ms: ..... **Initials:** ..... **Surname:** .....

Address: .....

.....

.....

Postcode: 0888

Do you already own a computer If so, which one do you own? .....

FUTURE PERFECT?

A taster of the games which look set to blow your monitors in the next month or two – Andy Storer rounds them up.

Pool Of Radiance

U.S.Gold ■ ST & Amiga ■ £Not announced

This looks set to be a biggie for all RPGers. Along with **Heroes of the Lance, Radiance** is the first title from a collaboration between Strategic Simulations and TSR – the producers of the **Advanced Dungeons and Dragons** fantasy role playing system. Expect quite a few releases from the same stable as they're signed up for five years worth of advanced combat and strategy. Will your alter ego ever forgive you? *(Unlikely – Id).*

Ebonstar

Mediagenic ■ Amiga ■ £24.99

1,000 years in the future you're hanging on the edge of a synthetic black hole and hurling your opponents through it as you try to destroy the **Ebonstar**. A skill and strategy game for up to 4 players battling through infinite levels of complexity. Suddenly the 4.1 billion levels of **Whirligig** have become a mere trifle.

Mortville Manor/Maupiti island

Lankhor ■ ST & Amiga ■ £24.95

Mortville is a mouse-driven graphic adventure with the unique quality of being full of sampled speech and sound effects. Gothic horror is enhanced by carefully crafted musical inserts compounding the sense of mystery. **Maupiti** is its next volume, which must win all awards for the fastest follow-up of all time – the original isn't even on the shelves yet!

The Empire Strikes Back

Domark ■ ST ■ £19.95

Guess it was only a matter of time, but here you have it; the sequel. **Star Wars** was pretty furious in the laser department but a little devoid of depth when it came to lasting interest; let's hope this version makes amends. How hard the Empire strikes back must be open to question, but since there are four levels on this one it must be an improvement.

■ *Better dead than Alien*

■ *Mortville Manor*

Wanderer

Elite ■ ST ■ £19.95

Fabulous 3-D shoot-'em-up cut with interstellar poker. Sounds wacky? You bet. But this is 3-D with a difference – you wear stereo specs to make red and blue screen images converge for stunning action with alien vehicles leaping out of the screen, so don't expect to see any screen shots of this one. The craziest poker sim you're ever likely to see – wildcards are to be found at the bottom of black holes!

StarRay

Logotron ■ Amiga ■ £24.95

As seen on this month's cover disk! If you can imagine **Defender** with a multi-plane solid background running at speeds only 16 bit power makes possible, you'll have a good idea of what to expect from this ultra-fast horizontal scroller. Better buy asbestos padding for the joystick though – spontaneous combustion is definitely a risk.

Better Dead Than Alien

Electra ■ ST & Amiga ■ £19.95

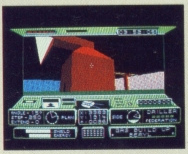
Second only to 'Chubby Gristles' from **Grand Slam** in our current awards for game name fame, **Better Dead** also scores with its loading screen. As for the game: it features the ugliest life forms you're never likely to see and your job is to return them to their rightful place in the ecological chain, ie. something approaching slime. Sounds great.

RUSHES

Clips from the cutting room floor and other games gossip

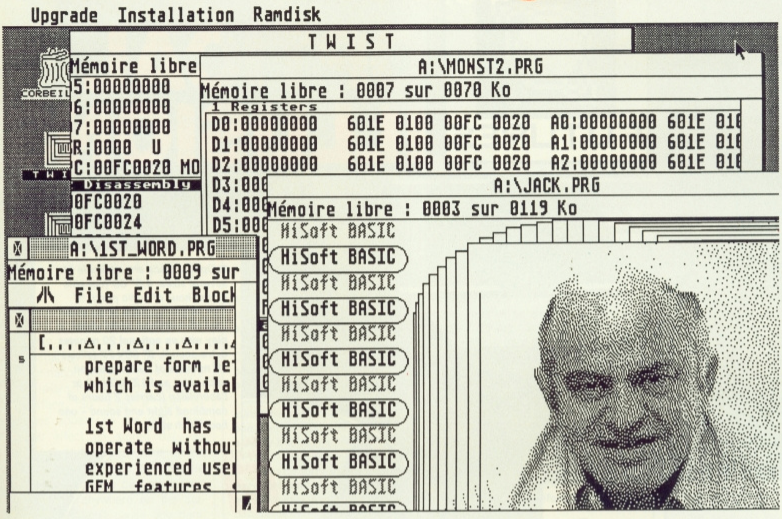
A pair of avant-garde 8 bits which cry out for conversion more than most are **Driller** and its sequel, **Dark Side**. Incentive have now decided to put them on the ST and Amiga to let us all explore the award-winning 'Freescape' system of solid 3D landscapes, billed as "the nearest thing yet to being there". What this'll mean on our 16 bit beauties is open to the imagination. Will you ever come back once you've got there We'll tell you when we've been there.

More on that link-up between **Strategic Simulations** and **TSR** that's already brought you Pools of Radiance. Apparently the five year plan is to do a range of games allowing you to build up your alter ego's attributes in the early releases, and then be able to transfer them to other games as they come out. That way it's not like starting all over again each time. Neat eh?



And last on the list of screenplays-yet-to-be comes news of the follow up to Captain Blood. As yet untitled, it features Star Wars (the movie) style bombing runs down those canyons. Maybe by the time it's released you'll have completed the original. Someone, somewhere quoted 45 hours as the real-time play length of **Blood** – ridiculously low, it must have been one of the programmers.

Let's Twist Again ...



TWIST is an amazing new ST switcher program that really works! We needed one ourselves, so we looked at all the programs available and only **TWIST** (from France) worked consistently ... so we bought it! Now we have produced the English version and just look at all these features:

- ✓ keep up to 14 programs in memory at once (memory permitting) and switch between them, instantly
- ✓ mix programs with differing resolutions
- ✓ work with both GEM and non-GEM applications
- ✓ Install your programs to run in whatever RAM space that you like or that your programs need
- ✓ **TWIST** at the press of a key or a click of the mouse
- ✓ Common, installable RAMdisk included
- ✓ Above all this ... it works!! again ... and again ...

If you ever thought it would be useful to have 1st Word & Degas Elite together or Tempus, DevpacST & Personal Pascal or Superbase & K-Spread then **TWIST** is for you!

TWIST again on your Atari ST for only £39.95 inclusive.

Use the order form opposite and enter into our free prize draw, you could win 6 bottles of Champagne!

HiSoft
High Quality Software

The Old School, Greenfield, Bedford MK45 5DE
☎ (0525) 718181

Please send me the following for my Atari ST:

TWIST	@ £39.95	☐
HiSoft BASIC	@ £79.95	☐
Power BASIC	@ £39.95	☐
Aztec C Professional	@ £129	☐
Aztec C Developer	@ £179	☐
DevpacST version 2	@ £59.95	☐
Personal Pascal 2	@ £79.95	☐
FTL Modula-2	@ £69.95	☐
Saved!	@ £29.95	☐
Wercs resource editor	@ £29.95	☐

Please send me the following for my Amiga:

HiSoft Devpac 1.2	@ £59.95	☐

prices include P&P and VAT

Name:
Address:

I would like to pay by: ☐ Access ☐ Visa ☐ Cheque/PO
Credit Card No:

Expiry Date: Signature:

Please enter me for the prize draw to be held on 1 August 1988. The 1st prize will be 6 bottles of Champagne, the 5 2nd prizes will be 10 3.5" disks and there will be 10 3rd prizes of a mouse mat.

SA 8/88

FUTURES

OPTICAL ILLUSIONS

■ *Optical discs are available in several sizes: 4.5" CD (capable of one hour of audio play), 5" CDV single (capable of six minutes of combined audio visual play with an optional 20 minutes extra sound), 8" CDV EP (allows 20 minutes of audio visual on each side) and 12" CDV LP or Laservision (carries 2 hours of combined sight and sound – one hour each side).*

Big on storage, big on sound, big on image – and big on prestige – compact discs and video discs are the way forward for data storage. Richard Monteiro looks and listens to laser disc lavishness.

INCH WAR

The 12 inch video disc, and in particular the read-only video disc player, never caught the imagination of the British buying public – the poorer quality read/write video cassette recorder being the firm favourite. Video discs are mainly used in interactive training, arcade games and professional Pop-videos. The video disc's flop, incidentally, spurred Philips and Sony to greater things, the compact disc.

Imagine the complete Oxford dictionary, Roget's Thesaurus, the Bible or the cartoon game *Dragon's Lair* on one disc One laser or optical disc to be precise. That's the attractive alternative to magnetic media (cassettes, floppy disks, hard disks, open-reel tape and so on). Magnetic media is undoubtedly, at present, the most popular method for storing data; audio, visual or otherwise. But it's old hat, prone to error and slow.

Although still in its infancy, laser disc technology is advancing apace and prices for such power are plummetting. Pioneered and subsequently marketed in 1982 by Philips, compact discs (and to a smaller extent video discs) revolutionised the record industry; it was there the laser disc first found a home. By 1985 IBM PCs could be fitted with a compact disk interface and users could choose from a handful of read-only CD data products.

Today – for a fee – you can connect a video disc player to your Amiga and with specialist software in control, you can conjure spectacular visual delights. A few notches over the £100 mark buys you software and interface to connect a video disc player to an ST. Supplied free is a video disc game which can be run and controlled via the micro. Atari themselves have CD goings-on: a compact disc player and control software will be available very soon. CD software is expected from various sources.

Magnets to beams

The original floppy disks were eight inches in diameter and held around 90K. Today a high-capacity floppy disk can hold 10Mbytes of data and

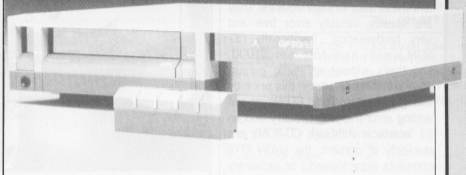
ever-so-expensive hard disks can manage 500Mbytes. Compared to the latest in optical storage research, that's peanuts. Compact disc storage offers a whopping 800Mbytes and a Laservision disc can store a gigabyte (1000 Mbyte)! Incredible when you consider their respective sizes: 4.5 and 12 inches. 800Mbytes is the equivalent, in data terms, of 2500 100-page issues of Format *(Ah, bliss! – Ed)* or 500 novels.

Because the narrowest read-head available – a laser beam – is used to retrieve data from an optical disc, lots of information can be held in a very small area. The surface of an optical disc consists of reflective and non-reflective pits. These two states easily translate to binary 0 and 1 respectively – ideal for computer and digitised data.

The microscopic information is protected against dust particles, finger prints and scratches by a clear plastic coating. The laser focuses on the information which is buried more than a millimetre under the transparent surface. So, even if dust or scratches appear on the disc, they have no effect on stored data as they're not at the focal point of the beam. There's no need to hold the disc by the rim; you can plant your sweaty palms anywhere on the surface and you won't cause any damage. This protection, coupled with the fact that nothing touches the disc to read it, make optical media very safe and durable.

While the large capacity and seemingly error-free format of optical discs may seem ideal for computer use, there are drawbacks. Current laser disc players are not cheap and are read-only (see panel), software is scarce and even the manufacturing process is relatively expensive. These problems are all being researched at the moment. In the meantime, though, there are still no better mass data retrieval systems.

CD-ROM FROM ATARI



Atari's much publicised but little seen CD-ROM player cum audio player is rumoured to be in the hands of developers – in other words, it's still months away from actual release. A very agreeable £399 tag has been given to it.

The CDAR 504 player interfaces to the DMA or hard disk port of any ST. Control software makes full use of GEM which means information retrieval is painless. Direct connection to a standard hi-fi is similarly possible – with control via detachable infra-red controller.

The player can store 500 Mbytes (over 100,000 pages of A4 text) with a load time of 153K per second. Computer data errors are kept to a minimum, one in every 10^{12} bits of information, by clever error-correction circuitry created by KnowledgeSet (whose MD is none other than Gary Kildall, creator of CP/M).

Several software houses have expressed an interest in releasing CD software including Kuma, GST and Pergamon. The most likely titles to appear will be encyclopaedias, dictionaries, reference works and information databases.

Big discs, small discs

Video discs came about at the start of the video boom. Since it was impossible, at that time, to produce a player that could record as well as playback, the video disc lost out to the video cassette recorder, which could do both. Since then laser discs have cropped up in a few specialised areas: interactive applications (like British Aerospace's Tornado ground crew training program and the BBC's Domesday Project), reproducing Pop videos on large screens in night clubs and in the odd arcade game. When hooked to a micro, running suitable controlling software, the capabilities of a video disc system allow the display of moving pictures, still frames and text, all with audio accompaniment.

Video disc technology is by and large restricted to professional applications because of its cost (around £1000 at today's prices, although models that have been out of production for a while can be picked up for

EARLY BIRD

WORM (Write Once Read Many) discs store data in much the same manner as a CD-ROM: as a long spiral of pits in a reflective metallic layer. The discs are larger, 5.25 inches, and the layer made of a special alloy of Selenium-Tellurium sandwiched between two sheets of glass. The material is mounted in a protective cartridge. The metallic film is designed to evaporate and produce small pits when exposed to laser light. WORM drives and interfaces aren't available for ST or Amiga micros, but at £3000 is this a problem?

PRESS FOR ACTION

Only two companies in Britain – Microvitec and Philips – offer a video disc pressing service. Philip's turnaround for a single 12 inch disc is roughly 21 days. That will cost you over £1000. Delivery in four days doubles the price. Microvite can do the same job for around £400, but the Philips disc will have far fewer dropouts (corrupted data areas).

Compact disc manufacturers are far more numerous. One such firm, Pergamon Compact Solution (another company in Maxwell's large corporation), can take your raw data, format it and record it on CD-ROM. Several factors affect cost: amount of formatting or tidying required, size of data and number of discs to be pressed.

DOMESDAY REVISITED

To commemorate the 900th anniversary of the Domesday Book (commissioned back in 1086 by William the Conqueror, who wanted to know what and whom he owned in Britain), the BBC, Acorn and Philips created the ultimate computer interactive video application, the 'Domesday Project.'

The project, of national proportions, was conceived by BBC producer Peter Armstrong. It is a comprehensive encyclopaedia of Britain in the 1980s and includes among its information – stored on two video discs – details of housing, land use, society, economics, industry and environment. This huge work comprises 23,000 stills, 10,000 sets of statistics and 1 hour of video sequences.

The massive database is organised around Ordnance Survey maps of the British Isles. By using a simple input device – a mouse or tracker ball – it's possible to zoom in from the whole British Isles to county level, to city level, to street level.

Only BBC and RML machines can take advantage of this system which comprises LaserVision player, two Domesday discs, colour monitor and one of the micros. Price is around £4000 – a fraction of the multi-million pound investment.

about £300). Microdeal are the only company selling interactive video to the consumer market, but even their product for the ST – which consists of interface, software and "free" Dragon's Lair video disc – drops in at £120 and assumes you already have the player.

Compact discs, apart from their obvious audio capabilities, are excellent mass data storage devices. They are speedy, virtually error free and very hard-wearing. Traditionally CD-ROM players have cost over £1000, and that's without an audio output. Atari are about to smash this price by taking a standard audio CD player and adding error-trapping circuitry and an ST interface. Although CD-ROMs are read-only at present, the luxury of a complete encyclopaedia or dictionary at your finger tips is exhilarating.

■ *Curiosity Killed the Cat are great fans of the Philips CDV Combi player – and so they should be as the machine can play all three sizes of CDV disc, standard compact discs and Laservision (12 inch video) discs.*

AMIGA TO AEROSPACE

Ariadne Software should ring a few bells with readers. They were the original implementors of the Microtext authoring system on the BBC, Commodore 64 and Apple computers. More recent ventures include the implementation of Commodore C64 terminal code for Compunet's interactive network and creation of the acclaimed Kickstart Guide to the Amiga.

Amigas are big news for Ariadne, who have sunk time and money producing impressive authoring tools for use with Interactive Audio Visual (IAV) systems.

"Up until 1985 we were a research and development establishment.", reminisced Hanafi Houbart, Ariadne's Interactive Design Manager, "It was around then that the Amiga first came out. Commodore International approached us to write a series of notes on how the machine worked to help software developers. The Kickstart Guide came later."

With this background it made sense for Ariadne to market their own Amiga products – which indeed they did.

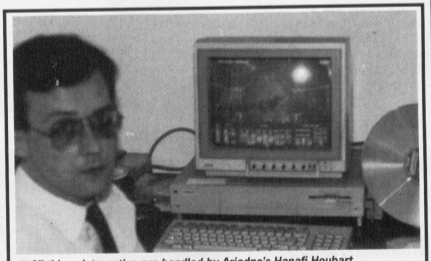
"Many people have problems programming the Amiga because there are a hundred and one things to keep track of; libraries, windows and so on. AAAE, the Ariadne Amiga Application Environment, handles all this automatically. At least a year of the two years we spent on interactive products was used to develop this software shell."

Two new software packages which use AAAE are Microtext and Video Player Device (both are authoring tools for computer based training and interactive audio/video – CBT and IAV for short). AAAE Microtext is Ariadne's implementation of the level 3 authoring language designed and developed by the National Physical Laboratory, Teddington. At its simplest Microtext can be used for video titling; originally this was restricted to text only. Ariadne have gone one better and allowed the Amiga's spectacular graphics and sound to mingle with the video disc images.

AAAE Video Player Device (VPD) is a general purpose driver that allows almost any video player to be controlled from an Amiga via a serial link, using just one universal set of instructions. It's a software system enhancement that uses loadable player drivers in the same way as printer drivers. VPD can be accessed from most programming environments including assembler, Basic and C. A powerful macro system exists whereby groups of complex commands can be saved and used later in application development.

Are you interested? Well, first you need an Amiga and monitor (minimum cost £700), then a video disc player (upwards of £1000 new) and finally Ariadne's software (£575 for Microtext and £402.50 for Player Device). In total you're looking at £3000 plus which, say Ariadne, is a fraction of the cost of a similar hardware offering from IBM.

But who would use this technology and for what? Several large conglomerates, including British Aerospace and Virgin, have looked long at hard at Ariadne's video disc control software and have come up with the same conclusion: it's good. So good in fact, that British Aerospace in Warton, Preston, use Amigas and Ariadne's software for interactive training of Tornado aircraft ground crew. Virgin also have plans for using Ariadne's software in interactive arcade machines. Although William Beckett, head of interactive projects at Virgin, wouldn't name games, he did hope for a playable machine by the end of the year.



■ *All things interactive are handled by Ariadne's Hanafi Houbart.*

Read today, write tomorrow

Several companies like Sony, Hitachi and 3M are investing large sums into the development of optical media that is both readable and writeable to the same level as today's floppy disks.

Tandy in Santa Clara, California, appear to have forged ahead with their announcement of Tandy Thor-CD – the first multiple read/write optical disk. Tandy say that audio, video and computer data can be stored and erased on their new discs which are compatible with all existing audio CD and CD-ROM players. Current players can read the new discs, but can't write to them as they lack the appropriate circuitry.

This exciting breakthrough could mean the beginning of the end for magnetic media. Tandy are going to pursue their achievement by producing an audio read/write CD player. They envisage an initial price of $500 (roughly £300). Read/write CD-RAM players should follow shortly after.

Philips are moving in another, equally thrilling, direction: Compact Disc Video. CDV is an extension of compact disk technology – pure digital sound with the addition of high quality video pictures. Philips first CDV player, the CDV475, due in September, is expected to sell for under £500. It will play the five-inch CDV single, eight-inch CDV EP and 12-inch CDV LP or video disc. The EP and LP are recorded on both sides.

Imagine being able to keep a list of the names, addresses and post-codes of every person in Britain on an updatable disc *(Worrying, isn't it? – Ed)*. Imagine the ultimate interactive game with true television-quality pictures and scintillating stereo sound. The potential is great, the technology is a stone's throw away. The optical disc revolution has started.

SOFTVILLE PD SERVICE

55 HIGHFIELD AVENUE, WATERLOOVILLE
HAMPSHIRE, PO7 7PY, ENGLAND. TEL 0705-266509

A SELECTION FROM OVER 300 DISKS FULL OF PD SOFTWARE FOR THE

ATARI ST RNAGE

ACC 1 Over 50 files full of desk accessories including Clock, Calculator, Calendar, Ramdisks, Puzzle etc. Very Good.
LAN 10 C Compiler RSI command line processor, MicroEmacs, TinyBasic Disassembler, MAKE utility and more.
WP 12 STWriter Elite plus full docs & tutorial; the best wod processor around.
MUS 5 SYNTH. Automatic patch generation for DX100 & CZ101.32 track MIDI sequencer.
MISC 2 ORBIT. Track any object orbiting earth; displays on screen data graphics. Includes data for current satelites. Great program, mono only.
ACC 24 Arc, versatile file squeezer, BICLOCK, set date/time. CODER, set printer from desktop. MONOEMULATOR, the latest version, run all mono progs on your TV colour monitor. Works with new TOS! Plus numerous other programs on this value disk!
INTRO A Disk full of sample PD programs for you to try and a full list of what's available. All these plus hundreds of ACCESSORIES, loads of GAMES, heaps of MIDI, LANGUAGES, DEMO'S, PICTURES, ART PACKAGES etc. More added monthly!

A SELECTION FROM OVER 150 DISKS FOR THE

AMIGA RANGE

SOF 2 TUTORIAL DISK. Over 30 articles plus 24 programs in C & Assembler, inlcuding source. Get more from your Amiga, get this disk today.
SOF 9 PERFECT SOUND, a great recorder/editor player. Disk includes over 24 sounds & instruments plus instructions. Create the sounds and music you've always envied!
SOF 21 PAGESETTER CLIP ART. Dozens of clip art files for use with this program.
SOF 26 TELECOMMUNICATIONS. Contact the outside world! Includes Aterm 13, Starerm 2, Argoterm, Keemterm ertc. Great package, the low cost way to get started.
All these plus hendreds of demos, pictures, utilities and the full range of FRED FISH-AMICUS disks, we get them monthly as they are released.

All the above disks are only £3.00 each or £2.75 each for six. The ATARI INTRO disks only £1.50. Make cheques PO's payable to SOFTVILLE.

SEND AND 18p STAMP NOW! for our FREE 20 page catalogue, state clearly the make of your computer, or phone Rod or Carol Gearing for further details. Find out what thousands of delighted users already know.

PUBLIC DOMAIN SOFTWARE

COULD BE THE ONLY SOFTWARE YOU'LL EVER NEED!
GET YOUR'S FROM
BRITAINS' No 1 PD SUPPLIER

"The definitive Pascal compiler for the Amiga"

– SOURCE : AMIGA USER

METACOMCO PASCAL NEW VERSION 2!

Metacomco, the authors of AmigaDOS, announce the release of version 2 of their unique single pass Pascal compiler. It is the most powerful and useful ISO Pascal on the Amiga with the friendliness and ease-of-use of a Turbo Pascal type environment.

The new manual even includes a section covering conversion of Turbo Pascal programs to Metacomco Pascal.

Ideal for beginners and experienced programmers. **£89.95**

Other extra features in the new release (which are optional extensions to the ISO standard) include:
■ **Dynamic strings** ■ **Separate compilation and conditional compilation**
■ **Single and double precision floating point** ■ **Full 32-bit pointers**
■ **Bitwise integer operations**
■ **Enhanced I/O error handling**
■ **Sequential and random access files**
■ **OTHERWISE in CASE statements**
■ **Complete access to the graphics and sound capabilities of the Amiga, with extensive examples** ■ **Includes linker and MAKE utility** ■ **Extensively rewritten 330 page manual.**

METACOMCO

26 Portland Square, Bristol BS2 8RZ, UK.
Telephone (0272) 428781
Fax (0272) 428618 Telex 444874 METACO G

See your local dealer or order direct from Metacomco. Prices include VAT and P&P for UK mainland. Add £6 for delivery outside UK. Registered users of previous versions can upgrade by sending original diskette plus £38.50 direct to Metacomco.

VISA

© METACOMCO 1988 Amiga is a trademark of Commodore-Amiga Inc. Turbo Pascal is a trademark of Borland International.

BYTEWARE

BYTEWARE
9 MARITIME TERRACE, SUNDERLAND, TYNE & WEAR SR1 3JT
TEL: 091-514 4222

LARGE RANGE OF TITLES AVAILABLE WIH UP TO 40% OFF RRP
ORDERS DESPATCHED IN 24 HOURS
ADVANCE ORDERS TAKEN FOR FORTHCOMING RELEASES – DESPATCHED ON DAY OF RELEASE
24 HOUR ANSWERING SERVICE

TITLE	ST	AMIGA
Beyond Zork	14.95	14.95
Defender of the Crown	17.95	17.95
Dungeon Master	14.95	—
Oids	11.95	—
Romantic Encounter	—	14.95
Barbarian (Psygnosis)	14.95	14.95
King of Chicago	17.95	17.95
Ferrari Formula 1	—	17.75
Outrun	11.95	—
Winter Olympiad '88	11.95	11.95
Instant Music	—	17.95
Test Drive	17.75	17.75
Xenon	11.95	11.95
Obliterator	14.95	14.95
Flintstones	11.95	*
Captain Blood	14.95	*
Gunship	14.95	*
Bards Tale 1	17.75	17.75
Grid Iron	—	14.95
Roadwars	11.95	11.95
Sinbad	—	17.95
Degas Elite	17.75	—
Terropods	14.95	14.95
Deja Vu	14.95	14.95
Beyond Ice Palace	11.95	—
Gauntlet II	11.95	—
Chessmaster 2000	17.75	17.75
Legnd of the Sword	14.95	*
Silent Service	14.95	14.95
Battleships	8.95	8.95
Music Construction Set	17.75	—
Garrison II	—	14.95
Computer Hits	17.95	17.95
Ikari Warriors	8.95	—
Backlash	11.95	11.95
Sky Fox	13.95	—
Strike Force Harrier	14.95	14.95
International Soccer	11.95	—
Interceptor	—	17.75
Jinxter	14.95	14.95
Dark Castle	14.95	14.95
Pawn	11.95	—
Pandora	11.95	—
Crack	—	11.95

TITLE	ST	AMIGA
STAC	26.50	—
Police Quest	11.95	—
Bards Tale 2	*	*
Impossible Mission 2	11.95	*
Football Manager II	11.95	11.95
Fast ST Basic (Disc)	31.50	—
Fast ST Basic (Rom)	59.50	—
Fleet Street Publisher	85.50	—
Publisher 1000	—	99.95
Kings Quest Triple Pack	14.95	17.95
Stir Crazy	11.95	11.95
Phonton Paint	—	49.95
Jet	—	29.50
Three Stooges	—	17.95
Time & Magik	11.95	11.95
Annals of Rome	—	14.95
Star Quake	11.95	—
Bob Winner	11.95	—
Music Studio	24.50	24.50
Arcade Classics	—	11.95
Balance of Power	—	17.95
Bad Cats	11.95	14.95
Leisuresuit Larry	11.95	*
Sherlock	*	14.95
Pink Panther	11.95	*
Adventure Con. Set	—	14.95
Peter Beardsley	11.95	11.95
Guild of Theves	14.95	*
Strike Force Harrier	14.95	14.95
Carrier Command	14.95	*
Buggy Boy	14.95	14.95
Vampires Empire	—	11.95
Arcade Force Four	14.95	—
Armageddon Man	*	19.95
Black Jack Academy	—	14.95
Faerytale Adventure	—	17.95
Port of Call	—	29.50
Sidewinder	6.50	6.50
ST Wars	*	—
Vixen	13.95	13.95
Screaming Wings	8.95	*
Mindfighter	14.95	14.95
Tempus	22.95	*

** Please phone for details*

2 FREE DISCS WITH ORDERS OVER £50
5 FREE DISCS WITH ORDERS OVER £100

Prices include P&P in the UK
Overseas orders please add £2 per title for first two titles and £1 per title thereafter

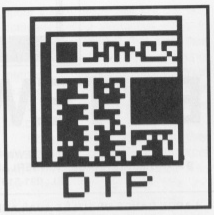
SOFTWARE ORDER FORM (BLOCK CAPITALS PLEASE)

TITLE	AMOUNT

MACHINE _____

CHEQUES/P.O'S PAYABLE TO BYTEWARE LTD

VISA



MOULD THE FRONT PAGE

Desktop Publishing gives you complete control over the pages of a newsletter, brochure or manual. With inexpensive software on ST or Amiga you can design and compile pages to exactly your own requirements. Simon Williams and Ben Taylor pick out the best of the current software and hardware.

Desktop Publishing (DTP) takes word processing to its logical conclusion and gives you full control over page layout, typography and graphics. Atari have already realised the potential market and have released their complete DTP system. Commodore are even now gearing up for an Autumn launch and making a final decision on the choice of laser printer and software to bundle with their Amiga DTP kit. Lasers are not obligatory for DTP, but the output quality is so much higher than even a 24 pin dot matrix that business users normally feel the extra money well worth it.

ATARI LASER PRINTER
£1379.99 (SLM804 Laser printer alone)
ATARI DTP SYSTEM
£2874.99 (Mega ST 2/floppy disk), £3449.99 (Mega ST 4/hard disk)

Atari announced the release of an inexpensive laser printer, the SLM804, in the middle of last year, and true to their word the machines started to appear at the end of 1987. The complete DTP system consists of a Mega ST (either 2 Mbyte or 4 Mbyte), an optional hard disk drive and the laser printer itself. Mirrorsoft's Fleet Street Publisher is bundled with the system (see separate review) complete with drivers designed for the SLM804.

The laser printer, like most examples of the ilk, is built like a tank with the turret missing. In place of the turret is the paper exit path letting sheets of paper out from the bowels of the printer. Paper is feed in either from a 250 sheet cartridge which slides in at the base or through a slot just above it which takes single sheets.

Below the hinged panel at the back of the printer are the only two controls, which alter print density and drum-type, and sockets for connecting it to the mains and the interface box. The interface is provided with the printer and ensures the ST can communicate with it. It's very much a grey 'black box', with the only signs of life being two leds on the front panel showing POWER and BUSY.

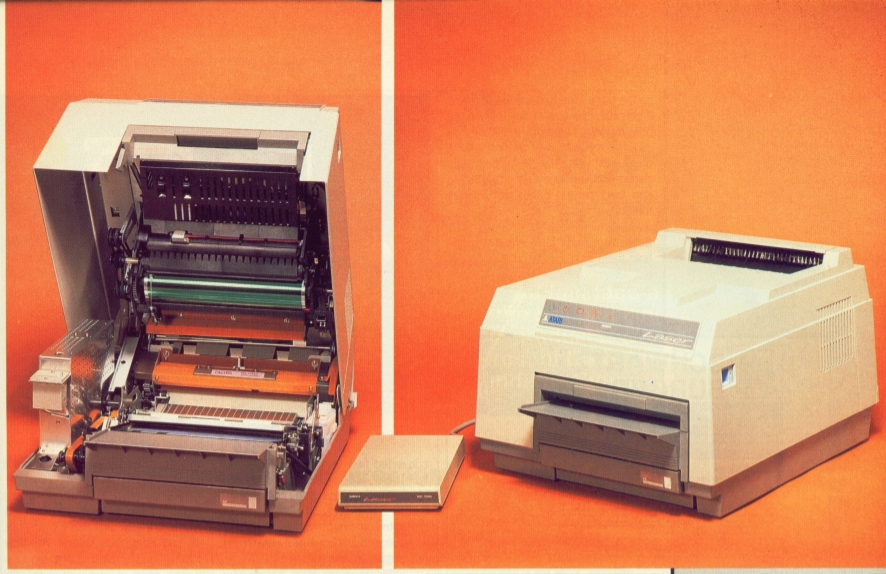
Delving inside the printer by lifting the top cover reveals the drum and laser engine. Unlike the innards of dot-matrix printers, which their manufacturers like to keep you well away from, you need to become familiar with the internals of lasers as you'll

HOW IT WORKS

Contrary to popular belief, laser printers do not burn the image onto the paper with a laser beam. All the little ovals in the middle of the 'o's would fall out if they did. The process is, in fact, very similar to a photocopier. It runs roughly like this:

An image of the whole page is first created in an area of memory (you need around 1MB) set aside for the purpose. This is a straight dot-for-dot image with each bit set 'on' for a dot and 'off' for no dot. This memory is usually located in the printer itself and is one of the reasons for the high cost of lasers. The Atari SLM804, though, uses part of the Mega ST's memory for this purpose, which makes it cheaper.

Once the page has been built up as an image in memory, it is transferred as pulses to a laser beam, which scans a specially coated drum within the printer. The coating, usually of Selenium, has been electrostatically charged before reaching the laser scan, but the beam removes the charge wherever it hits the drum leaving a mirror image of the dot pattern as areas of charge on its surface. The drum continues to rotate and passes the hopper of electrically conductive toner (powdered ink). The toner is attracted to the areas of charge on the drum and sticks to it. The drum now comes into contact with the paper which is passing through the printer and the toner transfers from the drum giving a positive impression on the paper. The charged areas of the drum are then discharged with a very high voltage and the whole process starts again on the next revolution. The paper passes through two high temperature rollers which fuse the toner to it permanently, and the printed page rolls out of the printer.



■ *The Atari SLM804 laser printer inside and out*

need to change the hopper for the toner (the fine powdered ink used by laser printers) and printing drum at 3000 and 9000 sheets respectively, and detailed instructions are provided in the manual.

In use

As well as the hardware, and a copy of Fleet Street Publisher for the DTP system, four disks of software are supplied with the SLM804. Two of these provide a range of fonts in a variety of sizes, so that the output from your favourite word processor looks good. There's also a special GDOS driver program so that GEM can make use of these fonts. The final disk contains a Diablo printer emulator, so that you can install the aforesaid favourite word processor for a printer it has heard of. With Diablo emulation, the SLM804 produces typewriter-style script. The disks also include a utility program, SDUMP, which produces a laser screen dump by pressing [Alt] and [Help].

The quality of output from the laser is very good in comparison to other forms of printing and has the combined advantages of quality print and graphics capability. It's not perhaps up to the standards of more expensive lasers, particularly in respect of areas of solid black, which can look a little washed-out, but output is fast and well integrated with both the Diablo emulator and Fleet Street Publisher's custom-made drivers. At a little over £1000, the SLM804 is excellent value for money. Bear in mind, though, that you can't use the printer with any ST less than a Mega ST2, nor indeed any computer other than an ST.

■

WHAT ARE THEY ON ABOUT?

If the terminology in these pages confuses you, it must surely be because you haven't read the introductory article in issue 1. Your name has been noted, but we'll overlook it this once. Here's a brief recap of some of the polite terms used in DTP:

Font – Sometimes called 'face' or 'typeface'. This is the look of the text. Fonts have names like Times (as created for the Times newspaper) or Helvetica. ST Amiga Format is typeset using News Gothic.

Point size – the height of the text. One point is 1/72 of an inch. This margin note is 7 point text, our article headlines are in 45 point text.

■

DTP software packages for both machines vary considerably in range of features and ease of use so we've compiled an extensive set of criteria which you might like to consider before buying. These categories are outlined later in this survey, and are accompanied by a comparative table showing you at a glance which package is likely to be the most useful for your particular application.

ST

FLEET STREET PUBLISHER

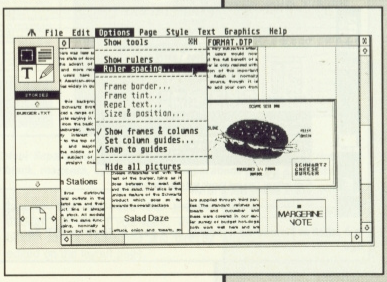
£125 ■ Mirrorsoft

■ All STs

Fleet Street Publisher (FSP) received a terrific boost when Atari adopted it as its preferred DTP and bundled it with their Mega ST and laser printer system. The system concentrates on typography at the expense of 'fripperies' like graphics and multi-page printing. The package comes on three disks, one of which has to be used as a 'key' each time you run it – irritating. The manual is well written and includes useful sections on publishing and a complete catalogue of the supplied clip-art. The index is large, but never seems to include references you actually need.

Installation is quite a painful procedure involving a lot of file and folder copying and would benefit from a more comprehensive installation program. Once into the program, though, things get rather easier. Like most DTPs, FSP asks you to define blocks into which you put text and graphics, but unlike several other programs of the type, it doesn't automatically reflow text when you lay one block over another. It's important, therefore, to design your page correctly before you start to fill it.

Text can be added from the keyboard or by importing an ASCII file from a word processor, and it is automatically hyphenated as it is placed



FSP ORIGINS

Fleet Street Publisher is perhaps particularly hot on typography because it was written by a journalist who had worked on fully-fledged DTP systems at the offices of the Daily Mirror. You certainly need to acquaint yourself with a few typographical terms to get the most out of the program.

on the page. The text can be reflowed if you alter the size of any blocks, but only by selecting from a menu. Text can't be reflowed over more than one page. FSP won't handle multiple-page documents automatically, though you can load several pages at once as memory allows.

Graphics can be loaded into defined graphics blocks and you can hold them on the page at a variety of resolutions, giving maximum reproduction quality on printing. Graphics from packages like Neochrome and Degas are useable, but have to be converted first using a separate utility. There are elementary line and block drawing commands but no geometric shape creation. Graphics can be edited at pixel level, though (only at screen resolution) and rotated in one degree increments.

FSP's strength is in typography and you can set almost any size, width, leading, kerning and text effect you wish. Infuriatingly you have to define your text block for each alteration in turn, but text updates are quite quick and the screen fonts are of a very high standard, particularly on an enlarged screen. The screen can be viewed at any size from 12.5% to 200%.

FSP doesn't provide paragraph styles which can be assigned to blocks of text, but there is a keyboard macro system which allows key sequences to be stored and repeated with a single keystroke. While not as simple to use as styles, it is in some ways more useful as you can record repeated text as well as command macros.

As supplied, FSP prints to dot matrix printers of all persuasions, but drivers are also available for the Atari, HP and PostScript lasers. The laser drivers need to be installed separately, but once in place produce very good quality print, at a typical time of 2 minutes for the test page, which is not at all bad.

For precise control of text on the page and the final look of single or small-run documents, FSP is a very good product at a very good price. The lack of graphics functions and multi-page support are annoying, but Mirrorsoft are looking into both these areas for an enhanced future version of the product.

features	**3.0**
performance	**4.0**
ease of use	**3.5**
documentation	**4.0**
format value	**4.0**

FAST FOOD

SCHWARTZ BURGER

In these days of fast food and easy money, some companies are still plugging away at the quality of their convenience products. Cheeseburger, the latest from Schwartz Bros. of Bath, sets new standards in gourmet quarter-pounders. Simon Williams tucks in.

CHEESEBURGER
Fries optional. Requires tomato and cucumber relish.
£1.35 ■ Schwartz Bros. ■ Tel N/A-

In the years before burgers when folks were restricted to egg and chips or steak and kidney pie there was less active criticism of the contents of your average bap and more recently MacDonalds. Learn have dismissed that American-sourced soft food raises widely in quality and nutrition.

Against this background, Bath-based Schwartz Brothers have introduced a range of new burger products varying in cost and content from the basic 1/4 pounder hamburger, through this minority interest in the cheeseburger, to top of the range garlic and mayonnaise burger in the middle of the range is the subject of this review, the straight Cheeseburger.

Action Stations

Schwartz Bros distribute through several outlets in the Bath and Bristol area and the entire product range is always available from stock. All models are supplied in the same functional packaging, nominally a 3.5" burger bun but with an attractive array of sesame seeds, and presented in a see-through carton. Opening the package reveals the modular contents of the interior.

All Schwartz Bros burgers contain the same salad modules but vary the meat and cheese content to suit requirements. The meat-dish starts life at a full 5.25", but the manufacturing process ensures a fully-compatible 3.5" finished product. Other users will find the standard meat dish well able to meet their needs but those with the newer, vegetarian drives can be happy to know that the Schwartz Vegburger is specially designed for them. Both disks are rated at over 35 lettes.

Say Cheese

Cheese has long been a subject of some controversy. Many feel that the use of mature cheddar slices but with more recent requirements for single sheet feeding it has really become essential to switch to the use of a processed cheese slice for speed and economy. Schwartz use a modern processor and the cheese integrates well with the rest of the burger, lying as it does between the meat disk and the salad module. It is a vital component of the Schwartz product which goes so far towards the overall package.

Salad Daze

Lettuce, onion and tomato, so often extras with similar products, are supplied as standard on the Cheeseburger, and are well put together with a good index. It's perhaps sad to see the tomato slice, the module which helped the Big Mac to prominence, but the total integration of meat, salad and bun are hard to fault at the price.

With Relish

Relish is a very subjective affair, but most users would now agree that the full benefit of a soft burger is only realised with the addition of this important constituent. Relish is normally filled at source, though it is possible to add your own from jars supplied through third party sources. Schwartz Burgers are normally supplied cold and are also covered in our earlier survey of budget holdings. Both work well here and are adequate for most communities. Power eaters, though, may well need to revert to one

of the heavier relishes such as garlic and mayonnaise or blue cheese. These are not really the subject of this review, though.

Conclusion

Cheeseburger sets the standard that other products will seek to better. It's a fully rounded piece of soft food with all the right ingredients and at the price it's hard to fault. Delivery is almost instantaneous from stock and, if you live, are available at 2 minutes 22 seconds notice. All in all a product to sit back and enjoy. And I'll be hungered if I'm going to write any more.

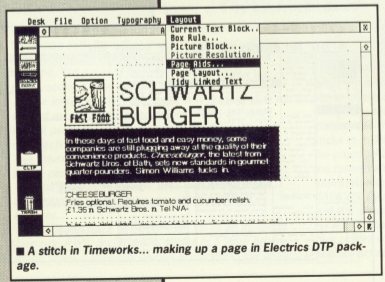
■

MARGERINE NOTE

It is a matter of regret to note that Schwartz Bros use margarine, and not butter, in their soft rolls, we learned later from ■

■ *This sample page was made up to look as much like a page from ST Amiga Format as possible (apart from the content). FSP let us get quite close to the real thing, missing out mainly on the exact fonts used in our pages. This page was printed on a top flight Apple Laserwriter II NT printer.*

TIMEWORKS DTP
£99.00 ■ Electric/Timeworks/GST ■ All STs


Desk File Option Typography Layout
Current Text Block...
Box Rule...
Picture Block...
Picture Resolution...
Page Bldg...
Page Layout...
Tidy Linked Text
SCHWARTZ
BURGER
FAST FOOD
In these days of fast food and easy money, some companies are still plugging away at the quality of their convenience products. Cheeseburger, the latest from Schwartz Bros. of Bath, sets new standards in gourmet quarter-pounders. Simon Williams tucks in.
CHEESEBURGER
Fries optional. Requires tomato and cucumber relish.
£1.35 in Schwartz Bros. in Tel N/A-

■ *A stitch in Timeworks... making up a page in Electrics DTP package.*

Timeworks Desktop Publisher comes on four disks with a well illustrated but unindexed 120 page manual. Timeworks provides for 9 and 24 pin dot matrix printers, Epson, HP, Atari and PostScript lasers, all drive configurations and medium and high-resolution screens. The program is not copy protected.

Timeworks makes use of a 'browser' to select paragraph styles, text and graphics files or text effects like bold or italics. It's four work modes are Frame, Paragraph, Text and Graphics, the last offering extensive shape drawing and filling. Frames can be made to snap to column grids, which themselves may be defined from a separate window. This feature alone can be a real time-saver in multi-page documents. Frames can be repositioned at any time and text is automatically reflowed around an overlaying frame.

As wel as an adequate built-in text editor, files from 1st Word Plus and Word Writer can be transferred directly, but text from other word processors can also be imported as ASCII files.

No clip-art is supplied with the program so you'll either have to create your own graphics or import them from other sources. Timeworks supports a number of graphics formats, including Degas and Neochrome, and the conversion is done the first time a graphics file is loaded. The image is initially scaled to fit the frame into which it's loaded, but cropping any part of it automatically rescales the selected area to fit the frame. All images are treated at current screen resolution, but this does mean you

can edit them directly and a magnifying pixel editor is included.

Once text is in position on the page, you can quickly set up its typography using paragraph styles, but you can also use the browser to set common effects such as bold and italics. The entire system is very easy to use once you've developed the self-discipline to define your paragraph styles before composing your document. What isn't so attractive is Timeworks' insistence on putting a blank line between paragraphs.

When you put together a paragraph style you are given the option of adjusting the leading. Under conventional page layout, specifying a leading the same size as the font would give a minimum useful gap between lines, allowed for in the design of the font. In Timeworks this pre-defined gap is much too large and leading values smaller than the font size are ignored. This means that multi-line headlines (and sometimes body text) nearly always look too widely spaced. Another problem is the spacing of words on the screen. If your text is justified, the word gaps appear enormous in Actual Size display, and its true spacing only becomes apparent when you enlarge the view to double size or print the page. This detracts from the main advantage of a WYSIWYG DTP.

Where Timeworks really shines is in its handling of multi-page documents. If your main requirement is for reports, manuals or other documents with a relatively simple layout, Timeworks will suit you well.

■ *A close up of some output from Timeworks. The left side is on an Epson LQ850 24-pin dot matrix printer, the right side on the Atari SLM804 laser printer for comparison. You can see the higher quality of the laser, although PostScript output is better still.*

features	3.5
performance	4.0
ease of use	4.0
documentation	3.0
format value	3.5

THE PC CONNECTION

Timeworks Desktop Publisher has recently been released on the IBM PC and its many lookalikes. The program is largely the same in both versions, and both run under their respective versions of GEM. It should be possible to swap files between the two, but try it first if this compatibility is important to you.

AMIGA

PROFESSIONAL PAGE

£249 ■ HB Marketing/Gold Disk ■ 1MB Amiga

Professional Page (Page) intends to show that an Amiga DTP system can take on a Macintosh and win. It is a comprehensive layout program which produces output intended for PostScript printers. Because the Amiga is a colour computer as opposed to the Mac, which is (usually) mono, Page has set out to exploit the advantage and produce documents for colour printing.

Page comes on two packed disks, and although it is possible to use it with a one-drive machine you certainly need 1 megabyte of RAM. It's aimed firmly at what journalists seem to call the 'power user', meaning that (a) it's expensive, and (b) you need lots of hardware to run it.

Page works on a 'box' system – every object, be it text or graphics, has to be in a box, and you move things around the page by moving their boxes. Boxes can have a background colour (if you want to print text on a red background, for example), can have rules drawn around them, and can be transparent or opaque so that you can put a text box over a graphic box and see the graphic through the text if you want. Text in boxes can be magnified and directly edited on the layout page.

■ *Professional Page can produce Four Colour Separations of colour images for professional offset printing. Here's a final page, with close-ups of the black, magenta, cyan and yellow separations for the King Tut inset.*

NORTH NOTTS COMPUTERS

Specialists in Computer Hardware and Software for Atari ST & Amiga
23 Outram Street, Sutton-in-Ashfield, Notts NG17 4BA
Mail Order Tel: (0623) 556686 (24 Hour Answering Service)

Prices include VAT. For Hardware orders add £5 P&P

All Prices are subject to change without prior notice. Offers subject to availability
No deposit finance arranged. Written details on request. Overseas orders accepted.

PACK A

Atari 520 STFM Standard Pack
with FREE Outrun Game:

- Atari 520 STFM Computer
- Fitted 0.5 Mb Disk Drive
- Free P.D. Software
- Outrun (R.R.P. £19.95)

Excellent Value at only £279.95
A wide Philips colour monitor £499.95

PACK B

- Atari 520STFM Computer
- Fitted 0.5 Mb Disk Drive
- Outrun (R.R.P £19.95)
- 10 Blank Disks
- Lockable Disc Box
- Mouse Mat

Excellent value at only £299.95

PACK C

- Atari 520STFM Computer
- Fitted 0.5 Mb Disk Drive
- Outrun (R.R.P £19.95)
- Platoon
- 10 Blank Disks

Excellent Value at only £299.95

PACK D

Atari 520 STFM Mega Pack

- Atari 520 STFM Computer
- Fitted 1 Mb Disk Drive
- Free Joystick
- Outrun (R.R.P. £19.95)
- 22 Top Titles

Marble Madness	Slapfight
Warlock	Trailblazer
Enduro Racer	Roadwars
Rampage	Winter Olympiad
Plutos	Chopper X
Defender of Crown	International Karate
Galaz	Tetris
Ranarama	Leviathan
Supersprint	Arkanoid
Mouse Trap	Eagles Nest
QBall	Strike Force Harrier

All this for only £379.95

PACK E

Atari 520 STFM Mega Pack

- Atari 520 STFM Computer
- Fitted 1Mb Disk Drive
- Free Joystick
- Outrun (R.R.P £19.95)
- Platoon (R.R.P £19.95)
- Gauntlet III (R.R.P £19.95)
- 22 Top Titles

Marble Madness	Slapfight
Warlock	Trailblazer
Enduro Racer	Roadwars
Rampage	Winter Olympiad
Plutos	Chopper X
Defender of Crown	International Karate
Galax	Tetris
Ranarama	Leviathan
Supersprint	Arkanoid
Mouse Trap	Eagles Nest
Q-Ball	Strike Force Harrier

All this for only £399.95

MONITORS/ PRINTERS DISK DRIVES/ MODEMS

- Philips 8802 col monitor with lead £199.95
- Philips 2852 H/R col monitor + Lead £279.95
- Atari M/R col monitor + Lead £379.95
- Atari H/R mon monitors + Leads £139.95
- Cumana 1 Mb Disk Drive (ST) £184.95
- Atari 1Mb Disk Drive (ST) £184.95
- Atari SMM804 Dot Matrix Printer + Lead ... £189.95
- Citizen 1200 fineprinter interface + Lead ... £759.95
- Genlock Video Digitiser 289.95
- Miracle WS2000 Modem + Lead £124.95
- Miracle WS4000 Modem + Lead £184.95
- Series Four 2123S Modem + Lead £299.99
- Series Four 1200S Modem + Lead £449.95
- Series Four 2400S Modem + Lead £559.95
- Okimate 20 Col Printer RRP ..... £199.99 .. £159.95

ATARI PC-1
ENTRY LEVEL SYSTEM

- 8088 Micro Processor
- EGA, CGA + Hercules graphics modes built in.
- Switchable clock speed - 4.77 Mhz or 8Mhz
- 512 RAM expandable to 640K RAM
- MS DOS 3.2 Operating System
- Capital 8087 maths co-processor socket
- Detachable XT style Keyboard
- Built-in 0.5 Mb double sided 5.25" disk drive
- 256K Screen RAM
- Supplied with Mouse
- Mono Screen resolution of 720x350
- Colour screen resolution of 640x350
- Palette of 64 colours, 16 can be displayed at the same time.
- Works with any CGA, MDA, EGA or multifrequency monitor.
- Floppy drive port for second external drive (PC-1 only)

FREE SOFTWARE:
- MS DOS 3.2
- Microsoft GW Basic
- GEM EGA Startup
- GEM EGA Desktop 2.1
- GEM Paint 2.0
- GEM Write

FREE MANUALS:
- MS DOS 3.2 Users Manual
- Microsoft GW Basic Users Manual
- PC-1 Owners Manual
- GEM Desktop Users Manual
- GEM Paint Users Manual

*** Without Mono Monitor £379.95**
*** With Mono Monitor £469.95**

ST SOFTWARE

Atari ST Business & Misc	RRP	OUR
Time Works Desk Top Publisher	99.95	89.95
Spectrum 512 (60hz Monitors Only)	59.95	47.95
Cad 3D for the 520STFM	29.95	24.95
Cad 3D V.2 for the 1040STFM	79.95	69.95
Cyberpaint for the 1040STFM	69.95	59.95
Start Magazine from America with disk	12.95	12.95
1st Word Plus	79.95	59.95
Accountant	171.85	159.95
Accountant Plus	228.95	199.95
Payroll	49.00	43.95
Stock control	49.00	39.95
Superbase Personal	99.95	94.95
D Base II	99.95	94.95
DB Calc	49.95	43.95
Art Director	49.95	44.95
Film Director	58.95	54.95
K Graph 2	49.95	44.95
Micro Time Clock Card	29.95	27.95
Fleet Street Publisher	115.00	105.00
Advanced Art studio	24.95	17.50
K Spread 2	79.95	69.95
Certificate Maker	24.99	22.45
K Switch	29.95	24.95
Colour Writer	49.95	44.95
Haba Writer	59.95	54.95
ST Replay	79.95	74.95
Print Master	29.95	24.95

ATARI ST MEDIA

10 x 5.25" DS DD Disks incl Labels	5.99
50 x 5.25" DS DD Disks incl Labels + Disk Box	29.95
10 x 3.5" DD DD Disks incl Labels	10.99
40 x 3.5" DS DD Disks incl Labels + Disk Box	43.95

LOWEST PRICES ON ALL SOFTWARE PLUS
✓ FAST RELIABLE SERVICE

Atari St Arcade Games	RRP	OUR
Outrun (Now incl Honest!) Special price	19.95	11.99
Buggy Boy	19.99	13.95
Platoon	19.99	13.95
Mouse Trap	14.95	10.95
Star Glider	24.95	16.95
Beyond the Ice Palace	19.99	13.95
Sidewinder	9.95	6.50
Bad Cats	19.95	13.95
Spidertronic	19.95	13.95
Vixen	19.95	15.50
Foundations Waste	24.95	17.50
Goldrunner II	19.95	13.95
Tranter	19.95	13.95
Ikari Warriors	14.95	12.95
Masters of the Universe	19.95	13.95
Roadwars	19.95	13.95
Captain America	19.95	13.95
Gauntlet II	19.95	11.95
Leathernecks	19.95	13.95
Starquake	19.95	13.95
Mach 3	19.95	13.95
Stap Fight	19.95	13.95
Predator	19.95	13.95
Wizball	19.95	13.95
Bubble Bobble	19.95	13.95
Rolling Thunder	19.95	13.95
Flintstones	19.95	13.95
Pink Panther	19.95	13.95
Backlash	19.95	13.95
Northstar	19.95	13.95
Crazy Cars	19.95	13.95
Black Lamp	19.95	13.95
Oids	19.95	13.95
International Soccer	19.95	13.95
Barbarian Ultimate Warrior	14.95	12.95
Impact	14.95	12.95
Bionic Command	19.95	13.95

	RRP	OUR
Stir Crazy	19.95	13.95
Alien Syndrome	19.95	13.95
World Darts	14.95	12.95
Football Manager	19.95	13.95
Rampage	14.95	12.95
Super Sprint	14.95	12.95
Star Wars	19.95	13.95
Return To Genesis	19.95	13.95
Solomons Key	19.95	13.95

ATARI ST ARCADE ADVENTURE

Pandora	24.95	17.50
Captain Blood	19.95	13.95
Impossible Mission II	19.95	13.95
Knightmare	19.95	13.95
Vampire Empire	19.95	13.95
Terramex	19.95	13.95
Eco	24.95	17.50
Dungeon Master	24.95	17.50
Obliterator	24.95	17.50
Barbarian (Psygnosis)	24.95	17.50
Carrier Command	24.95	17.50
Airball	24.95	17.50
Mercenary Compendium	24.95	17.50
Tanglewood	19.95	13.95
Star Trek	19.95	13.95

ATARI ST ADVENTURES

STAC	39.95	32.95
Legend of the Sword	24.95	17.50
Police Quest	24.95	17.50
Leisure Suit Larry (Land Of Lounge Liz)	19.95	13.95
Phantasie I	24.95	17.50
Phantasie II	24.95	17.50
Phantasie III	24.95	17.50
The Pawn	24.95	17.50
Guild of Thieves	24.95	17.50

	RRP	OUR
Jinxter	24.95	17.50
Hollywood Hijinx	29.95	20.95
Jewels of Darkness	19.95	13.95
Silicon Dreams	19.95	13.95
Kings Quest I	19.95	13.95
Kings Quest II	19.95	13.95
Kings Quest III	19.95	13.95
Lurking Horror	29.95	20.95
Knight Orc	19.95	13.95
Gnome Ranger	24.95	17.50
Mortville Manor (with speech)	24.95	17.50
Not a Penny more	19.95	13.95
Plundered Hearts	24.99	17.50
Roadwars Europa	24.95	17.50
Suspended	29.95	20.95
Journey into the Lair (Laser Disk Only)	99.95	89.95
Sword & Bet	29.99	20.95
Ultima III	24.95	17.50
Rings of Zilfin	24.95	17.50

ATARI ST SIMULATIONS & BOARD GAMES

Delux Scrabble	19.95	13.95
Powerplay	19.95	13.95
Universal Military Simulator	24.95	17.50
Gunship	24.95	17.50
Flight Simulator	49.95	39.95
Spitfire 40	24.95	17.50
Battleships	14.95	12.95
Balance of Power	29.95	20.95
Defender of the Crown	29.95	20.95
F15 Strike Eagle	24.95	17.50
Hunt for Red October	24.95	17.50
Ogre (Wargame)	24.95	17.50
Silent Service	24.95	17.50
Strike Force Harrier	24.95	17.50
Tenth Frame	24.95	17.50
Super Huey	19.99	13.95

AMIGA SOFTWARE

	RRP	OUR
Arena	29.95	22.95
Aargg	19.95	13.95
Archon	29.95	22.95
Buggy Boy	24.95	17.50
Backlash	19.95	13.95
Barbarian (Palace)	19.95	13.95
Barbarian (Psygnosis)	24.95	17.50
Battleships	19.95	13.95
Blaster Ball	9.95	7.95
Blacklamp	19.95	13.95
Bad Cats	24.95	17.50
Bonecruncher	14.95	12.95
Crazy Cars	24.95	17.50
Computer Hits	29.95	22.95
Cruncher Factory	9.95	7.95
Deep Space	24.95	17.50
defender of the Crown	29.95	22.95
Diablo	24.95	17.50
Dr. Fruit	9.95	7.95
Drum Studio	9.95	7.95
Eco	24.95	17.50

	RRP	OUR
Faery Tale	29.95	22.95
Football Manager	19.95	13.95
Ferrari Formula I	24.95	17.50
Fred	9.99	7.99
Flight Simulator II	49.95	39.95
Garrison	24.95	17.50
Garrison II	24.95	17.50
Grid Iron	24.95	17.50
Golden Path	19.95	13.95
Goldrunner	24.95	17.50
Guild of Thieves	24.95	17.50
Hacker	24.95	17.50
Hacker 2	24.95	17.50
Impact	14.95	12.95
Interceptor F/A18	24.95	17.50
Insanity Flight	24.95	17.50
joe Blade	9.95	7.95
Jump jet	14.95	12.95
Karate Kid 2	24.95	17.50
Kick Start 2	9.95	7.95
King Of Chicago	29.95	22.95

	RRP	OUR
Kings Quest	29.95	22.95
Knight Orc	19.95	13.95
Las Vegas	9.95	7.95
Leathernecks	19.95	13.95
Marble Madness	19.95	13.95
Mercenary	24.95	17.50
Metropolis	19.95	13.95
Mission Elevator	19.95	13.95
Mouse Trap	14.95	12.95
Ninja Mission	9.95	7.95
Obliterator	24.95	17.50
Pawn	24.95	17.50
Phalanx	9.95	7.95
Pinball Wizard	19.95	13.95
Plutos	14.95	12.95
Pool	9.95	7.95
Power Play	19.95	13.95
Q Ball	19.95	13.95
Romantic Encounters/ pleasure Dome	29.95	22.95
Road Wars	19.95	13.95

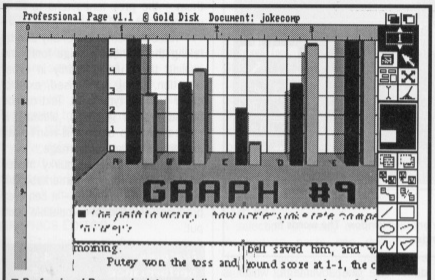
	RRP	OUR
Rockford	19.95	13.95
S.D.I	29.95	22.95
Scrabble De-Luxe	24.95	17.50
Stir Crazy With Bobo	19.95	13.95
Side Winder	9.95	7.95
Sentinel	19.95	13.95
Silent service	24.95	17.50
Sinbad	29.95	22.95
Sky Fighter	14.95	12.95
Space Ranger	9.95	7.95
Star Wars	19.95	13.95
Terramex	19.95	13.95
Terrapods	24.95	17.50
Test Drive	24.95	17.50
The Three Stooges	29.95	22.95
Time Bandit	24.95	17.50
World Darts	14.95	12.95
Wizball	24.95	17.50
Xenon	19.95	13.95

Page uses standard Adobe PostScript fonts for printing. It comes with 20 or so fonts for screen display, but it's up to you to make sure your printer supports the same ones. The PostScript laser printed output is superb, but because Page isn't primarily designed for dot matrix use, the output even on a 24 pin printer is very disappointing, bordering on illegible for sizes less than 10 points.

One of the most impressive things about Page is the way it handles graphics. There is no graphics editor, but you can import standard IFF files, including structured CAD drawings from Aegis Draw. Images are displayed in black-and-white with 16 grey scales, but the colours are remembered for use when printing. The calculation of the grey scales for screen display is excellent, and doesn't degrade at all when stretched or squashed.

There are still a few niggles about Page that could be improved in a future release. One omission is the inability to condense or expand text – stretching headlines to fit a given column width is a common requirement. Things aren't really fast enough either; whenever you move an item the entire screen is redrawn which can take an annoying 5 seconds or more. This is really the Amiga's fault for being slow, but to take on the Macintosh seriously it will have to speed up.

Overall though, Page justifies its 'Professional' tag with flying colours.



■ *Professional Page calculates and displays grey scale versions of colour graphics very well indeed*

features	4.5
performance	4.0
ease of use	4.0
manuals	4.5
format value	3.5

DTP

■

ADOBE DOBEDOO

PostScript fonts for printers are marketed by Adobe Systems, who don't support the Amiga or ST. You'll have to use a Macintosh or IBM PC to set up your printer if you want to use any fonts other than the printer's resident ones. PostScript printers come with Helvetica, Times, Symbol and Courier, but be warned that extra printer fonts cost around £150 a time!

■

PAGE SETTER
£79.95 ■ HB Marketing/Gold Disk ■ All Amigas

Page Setter is a home-user's DTP package, written by the same people as *Professional Page*. Unusually for a business package, it is copy protected. When you run it you are asked to type in a word from a specified place in the manual, which is tedious.

Page Setter consists of three integrated parts: a text editor, a graphics editor and a layout screen. You are normally in the layout screen which is a standard DTP create boxes/load text/shuffle around setup. You can't directly create and edit graphics or text on the page, but when you click on the text or graphics icons you are automatically taken to the text or graphics editor. After making your edits you return to the layout screen and paste the results into a box.

The graphics editor is really quite nice – black and white only, but with fill patterns and spray cans suitable for knocking up cartoons, graphs and diagrams.

There are two main problems with Page Setter. There is no auto-flow of text, so when you place a graphic you have to manually resize all overlapping boxes to make sure nothing gets overprinted.

Second, you can't mix fonts or text sizes within a text box. In other words, if your article is a flow of body copy interspersed with section headings, the section headings have to be in separate boxes from the main text before you can use a different style. However, text boxes can be chained together and moved en masse, so having an article running over 20 different boxes is easy to achieve.

Page Setter's text fonts are taken from the Amiga system disk, so there are no text sizes above 20 point. This makes headlines difficult – you have to use the graphics editor to stretch text and paste it in as a graphic, which can turn out very jagged.

Despite the initial difficulty of editing text in situ, Page Setter is a very simple package to use, and works very fast. Its speed of text reflow is excellent, its graphics editor is good, and the quality of graphics and text on a simple dot matrix printer is good. It's an adequate all-round performer for home users.

■ *Page Setter in action*

features	3.0
performance	4.0
ease of use	3.0
manuals	3.0
format value	3.5

CITY DESK
£99.95 inc. free clip-art disk ■ Precision Software/MicroSearch ■ All Amigas

City Desk doesn't use the conventional system of layout control at all. You don't create boxes and then place text or graphics in them, the program does that for you as you import files, but you can resize them as required .

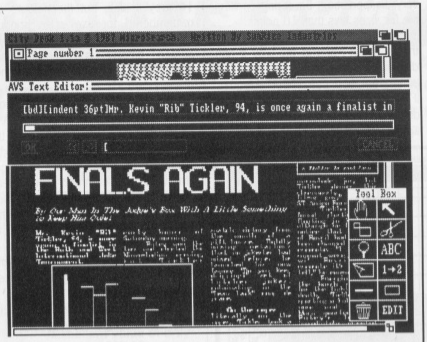
Text editing is strange. If you want to alter anything, like typing errors or text style, you click on 'Edit' and go into the text editor. In this mode you are shown the entire article as one long line of text which you can scroll left or right, and you have to locate the text to be changed from within that.

City Desk works mainly using embedded text commands. To italicise a word, for instance, you have to edit the text at that word, insert `[it]` before the word and `[p]` to revert to plain text after it. This is tiresome to use and a far cry from the ideal WIMP interface where you select the area to be modified and click on 'italic' on a menu.

In fact, every style alteration except font is effected by editing the text. To alter the paragraph indent to

CITY DESK ON THE A500

City Desk will just about run on an Amiga 500. If you only have 512K of RAM, there isn't enough room to print – you have to quit the main DTP and run a separate printing program. In fact, even on our 1MB A2000 the trial single-page document ran out of memory with three imported IFF images. There really ought to be an option not to load full bitmaps but refer to disk files.



■ *Editing text in City Desk is slow with a one-line window. The words in square brackets are formatting commands.*

20 points, you make sure your article begins with the text `[indent 20pt]`. City Desk interprets these square-bracket constructions as commands and doesn't display them. This does have one advantage, which is that you can prepare the text including the style instructions in a word processor and export the complete thing to City Desk. Also, you can mix any number of different styles and fonts in the same text box, unlike Page Setter.

On the graphics front, City Desk's got a passable graphics editor for preparing crude line drawings, but without spray or fill patterns. It can import standard IFF files, although the display is pretty ropey if you resize them – the grey tones tend to fill in unpredictably.

You can create text of any size by taking the standard Amiga fonts and scaling them up arbitrarily in either direction, giving condensed, expanded or just big typefaces. Text can be flowed around graphics, although it moves out in a block – it won't wrap around the edges of an image.

Overall, despite a quirky modus operandi, City Desk is remarkably full-featured and good value – it can even produce PostScript-compatible output.

features	**4.5**
performance	**3.5**
ease of use	**2.5**
manuals	**4.0**
format value	**4.0**

HITCH-HIKER'S GUIDE TO DTP

Good DTPs are very complex programs, and when scanning the list of features in an advert you ought to be asking yourself what *isn't* there! Here are the features we've identified as important – each DTP package is rated on them in the summary table.

MASTER PAGES

If you're creating a document with many pages, you'll want to define a template so that every new page you start has a standard number of columns, a box for a page number and that kind of thing. If your DTP doesn't have master pages, you'll have to layout each page by hand.

LEFT/RIGHT PAGES

For books, you'll want to have two different master pages. For instance, you'll probably want to have the page number at the top left of a left-hand page, but at the top right of a right hand page.

SET FONTS BY TEXT MARKS

DTPs aren't usually very good word processors, so for anything substantial you'll probably use a dedicated WP and import text as a file. DTPs can usually detect bold, italic and underlining in text files, but WPs can't usually change font or text size (although some Amiga word processors can). Ideally you need to be able to specify what font and size to use with a text file marker, such as:

```
\Helvetica\48 Freddie Starr
Ate My Hamster
\Times\10 Top entertainer
Mr. F. Starr...
```

This might be the way to do a headline in 48 point Helvetica, and the following text in 10 point Times. This saves you going through altering every text item by hand.

PARAGRAPH STYLES

Suppose you have three different basic styles of text: the main body copy might be in 10 point Times, section titles in 14 point bold Helvetica and captions in 8 point bold italic Times. With some packages you can define a style of your own so that you can select an area of text, pick the style from a menu saying 'body', 'headline' or whatever, and the font, size, leading and other style information will all be changed in one operation.

MAX. POINT SIZE/INCREMENT

There's usually a cutoff point on text size – 128 point is a common limit. To get text bigger than this you will have to use a graphics package to stretch it, and import it as a graphic box. Some DTPs insist the point size is a whole number, others allow you arbitrary sizes.

AUTO TEXT REFLOW

When you import graphics and plonk them down so as to overlap a text column, DTPs with auto-reflow will automatically rearrange the text to run around the edges of the image box. Some will also run it round the image itself.

LEADING

Pronounced to rhyme with 'Reading', not 'reading'. This is the space between lines of text.

KERNING

Being able to alter the space between

RECOMMENDED PACKAGES

AMIGA

If you have access to a PostScript printer or typesetter, you'll find Professional Page a superb package with everything you could want. However, on dot matrix printers the output is sadly lacking. Home users will get better quality from cheaper packages – City Desk is the best of the bunch here.

ST

Both Fleet Street Publisher and Timeworks DTP have their advantages. FSP is particularly strong on typographic control, but only has rudimentary graphics creation and no facility for automatically handling multi-page documents. Timeworks specialises in ease of use and repeated page layout. For longer documents it may be the better choice.

CONTACT ADDRESSES

ATARI – Atari House, Railway Terrace, Slough, Berks SL2 5BZ (0753 33344)

MIRRORSOFT – Headway House, 66-73 Shoe Lane, London EC4P 4AB (01-377 4900)

ELECTRIC DISTRIBUTION – 8 Green Street, Willingham, Cambridge, CB4 5JA (0954 61155)

HB MARKETING – Brooklyn House, 22 The Green, West Drayton, Middx UB7 7PQ (0895 444433)

PRECISION SOFTWARE – 6 Park Terrace, Worcester Park, Surrey KT4 7JZ (01-330 7166)

characters. This is particularly useful in big headlines where oddities in letter spacing show up most.

EXPAND/CONDENSE TEXT

A nice frill to have is the ability to expand or condense text. You might want to do captions in 80% condensed text, or stretch a headline to fill the width of the column without altering its height.

AUTO HYPHENATION

A dictionary of common long words and allowable hyphen breaks is built in to more sophisticated DTPs, so that when you flow text into narrow columns the words are automatically hyphenated to avoid unsightly gaps.

GROUP ITEMS

If you've defined half a dozen graphics and text boxes on your page, it's important to be able to move them all as a unit, thus saving you having to painstakingly realign every box.

GRAPHICS EDITOR

All DTPs allow you to draw rectangles and lines, but some also have a mini-paint package built in for knocking up diagrams, graphs and other oddities.

GRAPHICS CROPPING

Cropping is the process of hiding or cutting off the parts of a graphic you don't want to see, without changing its size.

GRAPHICS SCALING

This is the opposite of cropping – stretching an image without losing any of it.

FOUR COLOUR SEPARATIONS

This is the newest thing in desktop publishing. Particularly with colour micros like the ST and Amiga on the scene, people are wanting to include colour photographs in pages. To do this (via a printing company as opposed to a one-off colour dot matrix printout) you need to create four separate pages with the magenta, cyan, yellow and black components of the image. Professional Page on the Amiga can generate these four outputs automatically from its colour page.

GREY SCREEN SIZE

Esoteric but essential for the real power user printing to a typesetter. Altering the grey screen size allows you to control whether the photographs and grey tints you put on pages are printed with very coarse blobs or very fine blobs. You need to set it as fine as your printer will allow.

CLIP ART

A selection of ready made graphics for you to paste into documents. Usually fairly corny images like General Kitchener doing his "Your Country Needs You" act, telephone symbols and street signs. Having ready-made art to hand can speed page make-up considerably.

PAGE VIEW SIZES

Most DTPs allow you to view the page in three or four sizes so you can either see how it looks overall (but not read the text) or edit text but not see a very big area. It's nice if you can specify your own desired magnification so you can exactly control how much is displayed on the screen.

NUMBER OF PAGES

Most DTPs allow you to work on as many pages as your memory will allow, with text running from one to the next. Some only work on one page at a time.

AUTO PAGE NUMBERING

The ability to automatically copy the current page numbers into a particular place on a page. Handy for books and other multi-page documents.

SPECIAL CHARACTERS

Typesetters and laser printers have their own special character fonts for bullets, blobs and triangles, but these aren't normally part of the ST or Amiga character set. Some DTPs provide these extra symbols.

WHAT IS POSTSCRIPT?

Most printer users will be familiar with the idea of a 'printer driver' – PostScript is effectively the industry standard printer driver for laser printers and phototypesetters.

PostScript's strength is that the DTP software sending the file for printing need not know anything at all about the printer's output resolution – it sends the file in as a 'page description' which the printer simply reproduces to the best of its ability. You can print exactly the same file to a 300 dots-per-inch laser printer and a 1270 dpi phototypesetter and it will come out at each one's maximum resolution.

This is because when drawing graphics, conventional Epson dot matrix-type drivers send explicit instructions like 'print a dot at such-and-such a place', whereas PostScript says 'draw a circle, radius x, centre y' and leaves the printer to sort out the rest.

The down side of this is that PostScript is very complex and printers need a built-in microprocessor. The Apple Laserwriter has a 68000 micro inside it to do its PostScript printing – effectively a dedicated ST or Amiga! This makes PostScript laser printers very expensive – £5000 or more.

ARCHAIC STYLES

Current printing processes stem from mediaeval times, as does much of the jargon. Leading, you will recall, is the space between lines, and is pronounced as in the metal Lead. This term stems from the days when text was set up on the presses as rows of individual letters on blocks. To adjust the inter-line spacing the printer would put a thin strip of lead between the rows. The more strips of lead, or the bigger the leading, the bigger the line spacing.

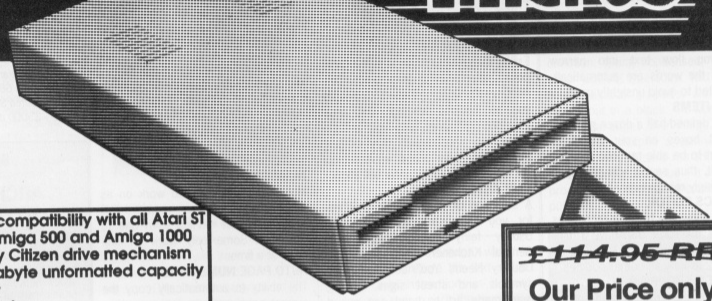
THE FORMAT CHECKLIST – HOW THEY COMPARE

	Prof. Page	Page Setter	City Desk	Fleet Street	Timeworks
Price	£249	£79.95	£99.95	£125	£99
Min. hardware required	Amiga, 1MB	Amiga, 512K	Amiga, 512K	ST 520	ST 520
Printers supported	PostScript & Amiga drivers	Amiga drivers	PostScript & Amiga drivers	9,24,SLM804 HP, PS	9,24,SLM804 HP, PS
Master pages	y	n	n	y	y
Left/right pages	y	n	y	y	y
Set fonts by text marks	y	n	y	n	n
Paragraph styles	n	n	n	n	y
Max. point size/increment	127pt/1 pt	Amiga fonts only	Arbitrary	250,.01	72,arbitrary
Auto text reflow	y	n	n①	n①	y
Leading	y	n	y	y	y
Kerning	auto, manual	n	n②	manual	manual
Expand/condense text	n	n	y	y	y
Auto hyphenation	y	n	n	y	y
Group items	y	n	n	n	n
Graphics editor	n	y	y	y	y
Graphics cropping	y	y	y	y	y
Graphics scaling	y	y	y	y	y
4 colour seps	y	n	n	n	n
Grey screen size	y	n	n	n	n
Clip art provided	n	y	y	y	n
Page view sizes	5	3	6	lots③	4
Max pages in doc.	memory	memory	memory	memory	999
Auto page numbering	n	n	n	n	y
Special characters	y	n	y	y	y

① There is a command to *manually* reformat the page
② There is kerning control in PostScript mode only
③ Screen magnification from 12.5% to 200% in .5% increments

Top Quality 2nd Drives for the Amiga and Atari ST at low, low prices

Evesham Micros



- ✔ Offers full compatibility with all Atari ST models, Amiga 500 and Amiga 1000
- ✔ Top quality Citizen drive mechanism
- ✔ One megabyte unformatted capacity
- ✔ Very quiet
- ✔ Slimline design
- ✔ Throughport (Amiga)
- ✔ Colour matched to computer
- ✔ Long cable for location either side of computer
- ✔ External plug in PSU (Atari ST)
- ✔ Full 12 months guarantee

~~£114.95 RRP~~

Our Price only....

£99.95

includes VAT and delivery

Don't forget **- all prices shown include VAT and delivery**

DISECTOR ST

POWERFUL Disk Utilities for all Atari ST models

VERSION 3 NOW AVAILABLE

☆ ***SOFTWARE BACKUP*** **with new turbo nibbler** Version 3 software backup now features a faster and more powerful copier including 40 parameter options to handle a greater range of programs and maximise on your disk storage. Utilises all available drives and memory.

☆ ***ORGANISER ACCESSORY*** Extremely useful desktop-based accessory, providing essential disk management commands including FORMAT, RENAME, DELETE etc.

☆ ***EXTRA FORMAT*** to maximise usable space on your disks - provides over *15%* additional user storage space per disk!

☆ ***RAMDISK*** and ***SET DATE/TIME*** accessories.

☆ ***UNDELETE*** to recover accidentally lost files.

☆ ***DISK ANALYSIS***

☆ ***DIRECTORY PRINTOUT***

☆ ***plus*** DISK SPEED CHECK, UNFORMAT and more!

Only £24.95

Existing users can upgrade to the latest version - enclose £7.95 handling charge

ATARI

520STFM SUMMER PACK!

Includes STFM with 1MEG drive, 22 games (retail value £413.94) & joystick.

Only £349.00

520 STFM, standard model	£269.00
1040 STFM latest model, includes TV modulator	£419.00
1040 STFM with mono monitor	£529.00
Mega ST2 with mono monitor	£849.00
Mega ST4 with mono monitor	£1099.00
Atari SLM804 laser printer, great value at	£1099.00
Atari SM124/5 mono monitor	£119.00
Atari SC1224 colour monitor	£349.00
Atari SH205 hard disk, new style	£539.00
Atari Mega ST2 Special Offer; includes Mega ST2 with mono monitor, SLM804 laser printer, 'Microsoft Word' and 'VIP Professional'	£1699.00
Atari DTP system - includes Mega ST4, Mono Monitor, SLM804 laser, 'Fleet Street Publisher', 20Mb hard disk & 90 day on site maintenance	£2499.00
Phillips CM8833 colour monitor c/w ST lead	£279.00
Phillips CM8852 as above, higher resolution	£299.00

(Extra £10.00 discount on Phillips monitors if bought with an ST)

All ST prices include: mouse etc. PLUS 5 disks of s ware including wordpro, utilities, graphics, game and demos.
We can quote you for any combination of hardware.

PRINTERS

All prices include VAT, delivery and cable

star

We use and recommend Star printers since they do offer an unbeatable combination of features, print quality, reliability and value. Make the sensible decision - get it right with a Star printer at our special, all in, prices.

Star LC10 replaces the NL-10, features 4 NLQ fonts, paper parking, front panel operation, PLUS 2 extra ribbons free of charge!	£199.00
Star LC10 7-colour version of above printer, inc.2 extra black ribbons	£234.00
Star LC24-10 New feature-packed multifont 24 pin printer! check availability	£319.00
Star NB24-10 great value 24pin inc. FREE sheet feeder + 2 extra ribbons	£469.00
Star NX-15 budget wide carriage printer	£319.00
Star NB24-15 wide carr.version of NB24-10 inc. FREE sheet feeder!	£599.00
NEC P2200 budget 24pin, great value 168/56cps	£319.00
Amstrad DMP3160/3250DI good value 10" with serial/parallel interfaces	£189.00
Amstrad LQ3500 24pin at low price	£329.00
Amstrad DMP4000 fast wide carriage	£329.00
Panasonic KXP1081 reliable budget 10" printer	£179.00
Panasonic KXP1082 faster version, inc.IBM proprinter emulation	£219.00
Citizen 120D good value 10" 120cps	£149.00

Low cost cut sheet feeders for above printers available - please phone for details

3.5" Disks

10 Bulk packed DS/DD 3.5" disks with labels, fully guaranteed	£11.95
25 bulk disks as above	£27.95
10 disks as above with plastic case	£13.95
25 disks as above, with 40 capacity lockable storage unit	£34.95
Verbatim DS/DD disks, top quality media with lifetime guarantee. Box of 10 only	£19.95
SKC MF2DD DS/DD 3.5" disks. Box of 10	£17.95

How to order from Evesham Micros

VISA

Phone us with your ACCESS or VISA card details on : ☎ 0386-765500

All prices include VAT and delivery. Next day delivery £5.00 extra.

Send cheque, Postal Order or ACCESS/VISA card details

Govt., educ. & PLC orders welcome
Same day despatch whenever possible
All goods subject to availability, E.&O.E.
Open to callers 6 days, 9.30-5.30

Evesham Micros Ltd
63 BRIDGE STREET
EVESHAM
WORCS WR11 4SF
✆ 0386-765500
fax 0386-765354
telex 333294

Also at: 1762 Pershore Rd., Cotteridge, Birmingham B30 3BH Tel: 021 458 4564

REVIEW

K-SCOPE

Most peripherals for the ST are concerned directly with the computer's capabilities. Kuma's newest offering is rather different, as it aims to convert your micro into a completely different piece of laboratory equipment. Simon Williams broadens his scope with this strange metamorphosis.

K-SCOPE

ST Only. Requires mono monitor
£199.95 ■ Kuma ■ 07357 4335

When you get hooked on computing it's easy to divorce yourself from neighbouring areas of interest, such as electronics. If you're still keen to build your own audio equipment or experiment with music, though, one of the most essential pieces of test equipment is an oscilloscope, and you can save yourself a good few pounds by wiring your ST up for extra duties.

Unlike conventional scopes, which bristle with knobs, verniers, sliders and sockets, the hardware of the Kuma unit is simplicity itself. A small cream box plugs into the ST cartridge port and two BNC connectors on the front panel take a probe lead to connect the unit to the outside world. The manual is really geared towards the knowledgeable user – it would have been good to see a tutorial section explaining the main features of an oscilloscope and how K-Scope provides them. This simple addition would help to open up the product to a much wider audience.

Sounding out

K-Scope's basic operation couldn't be simpler, although it only works with high-resolution mono displays. Once you provide a suitable analogue source to one of the input channels and select the display of one or both traces, clicking on the trigger button samples the incoming signal and displays it on the screen. The sample spans either 2 or 10 screen widths and you can scroll along its length. The time taken to capture a signal depends on the timebase you've set and the length of the sample.

The scope trace shows a frozen snapshot of the input signal, not a constantly changing real-time display. This is a shame, but by way of compensation you can select to repeat your sample automatically which does show changes in irregular waveforms. Although even the ST's high-res display is not high enough to completely smooth a simple waveform, the approximation is good, and you can read the amplitude and frequency from the display grid quite adequately.

A number of options are available within K-Scope, including the ability to explode the trace display up to the full screen size and an output signal sent to a spare video line from the ST, which can be used to trigger external equipment, such as a camera.

Where to now?

The obvious use of K-Scope would be in the classroom, where its ability to sample and redisplay waveforms would be very useful. This function would be greatly helped by the ability to save samples to disk – Kuma say they plan to implement this soon. The keen home-project enthusiast could also make use of it, but here the restriction is the speed of A to D conversion, which effectively limits the frequency range to around 100kHz, or mainly audio work.

For all that, a twin beam, sampling oscilloscope for under £200 must be good value and is likely to find it own niche with progressive (ie. not BBC Micro-obsessed!) secondary schools.

■ *Reproduction of a pure sine wave in the ST's high-resolution mode is quite reasonable.*

■ *The convertor box plugs into the side of an ST or Mega ST, but you have to supply your own probe and cable.*

for

- **Simple GEM-based operation**
- **Same hardware can be used for a Spectrum Analyser**

against

- **No probe leads supplied**
- **Display is a snapshot, not real time**
- **No method of saving samples to disk**
- **Limited frequency range**

features
0 1 2 3 4 5

performance
0 1 2 3 4 5

ease of use
0 1 2 3 4 5

manuals
0 1 2 3 4 5

format value
0 1 2 3 4 5

WHAT MORE TO K-SPECT

Kuma's oscilloscope package is only half the story. The same analogue to digital convertor forms the basis of another package suitable for scientific or educational work. *K-Spect* is a frequency spectrum analyser – this is great for splitting up square waves, music or other non-sinusoidal waveforms into their fundamental frequencies and a range of harmonics.

The good news is that the whole package costs the same as K-Scope (£199.95) or £89.95 for the software on its own. If you buy both packages together you can have them for £289.90 (that's £199.95 plus £89.95 in case you hoped for a discount).

SPREADING: THE WORD

What if the rates increase on our offices? What if sales decline over the summer? What if the sky falls on Chicken Licken? It's just this kind of projection that is tedious to work out by hand, but a dead cinch for a computer spreadsheet. Simon Williams explains the principles and looks at a new arrival on the scene.

IT'S HISTORY

The original micro spreadsheet, VisiCalc, was written by Dan Bricklin in 1979. It is supposed to be largely instrumental in the rise of Apple Computers, as thousands of American businessmen bought Apple II micros purely to run the spreadsheet.

The spreadsheet is the only new category of software invented for the micro-computer. Databases drifted in and were chopped up small to get them into the memories of the young upstart micros; word processors were ripped from their dedicated host computers and squeezed onto home computers, but spreadsheets were written for, and have been largely responsible for, the business micro. The first spreadsheet, VisiCalc, is said to have sold more Apple IIs than any other program and the heir to its thrown, Lotus 1-2-3, has become a self-contained industry on the PC.

But what is a spreadsheet? Sounds like an American duvet – surely they're only of use to accountants and City financiers? Far from it. Spreadsheets are widely used by business people, hoteliers, publishing magnates, in fact anybody who needs to forecast the effects of changes on finance or work load. Anybody who needs to pose 'What if...?' type questions and doesn't have hours to recalculate a series of figures.

Paper and pen

Think of a spreadsheet as a large sheet of electronic notepaper, divided into squares like the arithmetic books you used at school. Now imagine that each square (or 'cell') can contain not just a single digit, but a complete number, label or title. Each number can be related to any other and be dependent on the result of any calculation on the sheet. Finally, imagine that it's the computer which handles all the calculations and that when you change any value on the sheet, all others that make use of it will be automatically updated. You can no doubt start to think of uses for such a program almost immediately – so have hundreds of thousands of other people. The mechanics are really pretty straightforward.

When you load a spreadsheet you are presented with a largely blank screen which is likely to be marked with numbers down its left-hand side and letters across the top. The numbers mark each row of the spreadsheet and the letters indicate the columns. The screen acts as a large window onto a much larger spreadsheet and can be moved around to view any part of it. One of the cells will be highlighted in inverse video (white on black) and this highlight acts as a cell cursor and shows which cell is currently active.

In the cells

The other section of a typical spreadsheet screen is the entry line. This is where you type in or edit the contents of the active cell. It might be a heading, such as January, London or Total Cost, a number used in calculations within the sheet or a formula defining a calculation. In the case of a formula, the entry line shows the algebra itself, while the cell on the spreadsheet shows the result of the calculation.

A formula is written much as you would write an assignment statement in BASIC (if you've never tangled with BASIC read the panel on variables in our BASIC tutorial this month). The main difference is that the variables are all cells in the spreadsheet, which are each described by their letter and number co-ordinates. Thus the cell in the top left-hand corner of a spreadsheet would normally be referred to as A1. A range of cells is normally described by reference to the top left-hand and bottom right-hand cells (ranges can normally only be rectangular in shape). So, for instance, the range of cells bounded by B3 in the

```
B5  :                                                    Last: 615
Attr  Copy  Del  File  Goto  Hold  Ins  Misc  Os  Title  Undo  Width  Quit
   A:          B:       C:       D:       E:       F:       G:
-------------------------------------------------------------------------
 1|                    ST Amiga Format Estimated Expenses
 2|          JAN      FEB      MAR      APR      MAY      JUN
 3|
 4|Burgers
 5|Shows     ■■■■
 6|Travel
 7|Petrol Money
 8|Beer Money
 9|Armadillo Feed
10|Eyelid Props
11|          ----------------------------------------------------------
12|Monthly Total
13|
14|Running Total
15|          ----------------------------------------------------------
16|
17|
18|
19|
20|
```

■ *Start by laying out the table and labelling the rows and columns.*

top right and E7 in the bottom left could be described as B3:E7 or B3,E7 or (B3E7), depending on the particular spreadsheet program being used.

To set up a model on a spreadsheet you move around the sheet entering labels, values or formulae into its cells in any order and just about any positions you like. The only proviso is that most spreadsheets calculate the results in each cell in a particular order, usually from top left to bottom right. It's important, therefore, that the formulae you enter refer only to other cells to the left or above the current one. Without this stipulation, you're likely to end up with erroneous results in some cells.

A Desire to replicate

As you build up a model on your sheet you'll start to notice that many of the formulae are very similar. For example, in a sheet of monthly estimates, the formula for total expenditure in one month will be very similar to all the other 11 months' formulae, with only the cell references changed. Rather than having to type very similar formulae into a number of cells, most spreadsheets let you *replicate* a formula from one cell to another, or from one range to another. The program automatically adjusts the cell references for you.

Cell references can be copied 'absolutely' or 'relatively'. To understand the difference, consider this example: suppose you have three cells A1, A2 and A3, and you've set A4 to be their sum, calculated with the formula SUM(A1:A3). If you replicated cell A4 into B4, a *relative* copy would put the formula SUM(B1:B3) into B4, and an *absolute* copy would leave it as SUM(A1:A3). In other words, the relative copy realises the formula is saying, "add up the three cells above this one" and will adjust all the cell references to preserve that fact as it copies.

All these facilities wouldn't be a lot of use without the necessary mathematical functions to include in formulae. Most spreadsheets include a wide range of mathematical and statistical functions, and the more sophisticated products also let you look up values within a range of cells and plot results as graphs.

Graphing abilities are tied into the sheet itself and usually cover line graphs, and bar and pie charts. Preset graphics functions allow you to select rows and columns and plot one directly against another, to screen or printer.

The spreadsheet is a truly micro application and used sensibly in business it can save a great deal of time, not to mention wear on your calculator fingers.

```
B12 :                                                    Last: G15
Attr  Copy  Del  File  Goto  Hold  Ins  Misc  Os  Title  Undo  Width  Quit

   A:          B:       C:       D:       E:       F:       G:
---------------------------------------------------------------------------
 1|                          ST Amiga Format Estimated Expenses
 2|          JAN        FEB      MAR      APR      MAY      JUN
 3|
 4|Burgers     256.00   261.12   266.34   271.67   277.10   282.64
 5|Shows       212.00     0.00     0.00   235.00     0.00   210.00
 6|Travel      313.00    54.00    57.45   367.00    56.87   328.00
 7|Petrol Money  405.00   367.00   343.00   382.00   319.00   333.00
 8|Beer Money    103.00   103.51   104.03   104.55   105.08   105.60
 9|Armadillo Feed  539.00   539.00   539.00   539.00   539.00   539.00
10|Eyelid Props     0.24     0.00     0.00     0.00     0.00     0.30
11|
12|Monthly Total
13|
14|Running Total
15|
16|
17|
18|
19|
20|
```

■ *Enter the figures in the table,some by hand and others, like Burgers and Beer Money, using a formula.*

```
D12 : SUM(D4:D10)                                        Last: G19
Attr  Copy  Del  File  Goto  Hold  Ins  Misc  Os  Title  Undo  Width  Quit

   A:          B:       C:       D:       E:       F:       G:
---------------------------------------------------------------------------
 1|                          ST Amiga Format Estimated Expenses
 2|          JAN        FEB      MAR      APR      MAY      JUN
 3|
 4|Burgers     256.00   261.12   266.34   271.67   277.10   282.64
 5|Shows       212.00     0.00     0.00   235.00     0.00   210.00
 6|Travel      313.00    54.00    57.45   367.00    56.87   328.00
 7|Petrol Money  405.00   367.00   343.00   382.00   319.00   333.00
 8|Beer Money    103.00   103.51   104.03   104.55   105.08   105.60
 9|Armadillo Feed  539.00   539.00   539.00   539.00   539.00   539.00
10|Eyelid Props     0.24     0.00     0.00     0.00     0.00     0.30
11|
12|Monthly Total  1828.24  1324.64  1309.82  1899.22  1297.05  1798.55
13|
14|Running Total  1828.24  3152.87  4462.70  6361.92  7658.97  9457.52
15|
16|
17|
18|                    N.B. Burgers increase by 2% per month
19|                         Beer money increases by 0.5% per month
20|
```

■ *Finally, enter the two formulae for the tables and replicate them across the sheet.*

DIGICALC

Amiga and ST ■ ST demo on cover disk

£39.95 ■ Digita Int., Kelsey House, Barns Road, Budleigh Salterton, Devon EX9 6HJ ■ 0395 45059

Digicalc sets out to be an easy to use spreadsheet, providing the most popular facilities without over-burdening the program with extraneous functions or facilities. It started life on the Amstrad PC and has been converted for the ST and Amiga. This has meant some concessions in the use of each machines facilities.

In the box

Digicalc comes packaged in a video cassette-style case which houses a single disk, 30 page manual and quick reference card. The manual contains separate tutorial and reference sections, a glossary and an index. The content is concise but is littered with 'Important Notes' which pull you up rather too often. Many could have been incorporated into the main text to better effect. Coverage of the product is adequate to get you going and includes a useful section on a proper back-up regime for use of the program with important data (the grandparent, parent, child cycle). The quick reference card covers all aspects of the program, once you've familiarised yourself with its operation.

The program itself runs from the Desktop and forsakes GEM almost immediately in favour of its own, more conventional interface. In this respect it's like Protext, relying on keystrokes and commands rather than menus and mouse-clicks. The screen layout is fairly straightforward with an edit line at the top showing the contents or formula applied to the current cell and a horizontal bar menu on the sec-

CELL COUNT

A continuing trend in the design of spreadsheets has been to allow for large and larger cell references. Some products now offer sheets of cells 65535 by 65535. This is obviously much larger than the maximum size of sheet you could hold in memory. It does, however, allow for particularly long or particularly wide sheets. Modern spreadsheets don't waste space storing empty cells, so conserving memory.

SUPPORT

If you return the registration card included in the Digicalc package you get three months' free telephone support and any upgrades that may become available within that time. You can extend this support for a further year by paying Digita a further £20.

AA XPRESS

A mail order company that doesn't 'ang about!

AMIGA AND ATARI XPRESS. FLOOR 2, 50 BRIDGE STREET, ABERDEEN, SCOTLAND. TEL: 0224 571230

ATARI ST SOFTWARE

IKARI WARRIORS	£12
BMX SIMULATOR	£12
GOLDRUNNER 2	£15
BARBARIAN	£14
CARRIER COMMAND	£16
DUNGEON MASTER	£18
HABAWRITER 2	£35
HOLLYWOOD POKER	£10
KARATE KID II	£10
PAINTWORKS	£18
DATAMANAGER	£35
SWIFTCALC	£35
KARTING GRAND PRIX	£8
MARS COPS	£15
ROLLING THUNDER	£16
MIDI MAZE	£25
THE WALL	£16
WARLOCK	£13
TETRIS	£14
TRIVIAL PURSUIT	£14
CAPTAIN AMERICA	£19
FRIGHT NIGHT	£17
SHADOWGATE	£19
CAPTAIN BLOOD	£19
DEFENDER/CROWN	£22
JINXTER	£19

BUDGET SOFTWARE!

ADDICTABALL	£8
DEATH STRIKE	£8
LIBERATOR	£11
GNOME RANGER	£11
GOLDRUNNER SCENERY DISKS 1&2	£5 EACH.
EXTENSOR	£8

AMIGA SOFTWARE

AEGIS VID/SCAPE	£145
AEGIS DIGA	£55
AEGIS IMAGES	£25
AMIGA KARATE	£14
AUTODUEL	£19
DELUXE MUSIC C.S	£50
DELUXE PAINT II	£74
DIGI PAINT	£40
FLIGHT SIM. II	£35
MI AMIGA LEDGER	£75
PAGE SETTER	£85
PCLO JUNIOR	£54
PRO VIDEO CGI	£135
SCRIBBLE II	£75
TRUE BASIC	£52
VIP PROFESS.	£105
ZING	£60

ATARI ST AND AMIGA USERS!

If you do not see the software that you require on our list, give us a call – we have or can get **EVERYTHING!**

We have heard of mail order companies that cash cheques and take weeks and weeks to deliver (if they ever do!) that's why we are here – to be different, let us prove it to you! Add VAT and £1 P&P per title.

SUMMER SPECIAL! 10 U/C Sony Bulk DS/DD 3.5" disks in plastic library case only £8.99

SIREN SOFTWARE

SECOND DISC DRIVE

Add an extra drive for only £84.99

Our superb drive can really help you make the most of your ST allowing complex software to be run without disc swapping etc. The drive comes complete with all cables to connect it to any ATARI 1040 STF or 520 STFM

- ★ Ultra quiet
- ★ Slim styling, colour matched to the ST
- ★ Top quality Citizen/NEC drive mechanism
- ★ 1 megabyte capacity (unformatted)
- ★ Full one year parts and labour guarantee.

Available now only £84.99 inc. VAT & P&P

NEW NEW

★★★ AMIGA SOUNDBLASTER ★★★

Everyone knows that the Amiga has the best sound facilities available on any popular computer today. Unfortunately until now, unless you could connect your Amiga to your stereo system you could not appreciate the quality of the sound.

The AMIGA SOUNDBLASTER is a small stereo amplifier that comes complete with 2 high quality 20 WATT 3 way speakers. It is easily connected to your Amiga 500/1000 and adds a new dimension to all games.

- ★ Comes complete with 2 high quality stereo speakers
- ★ Twin volume/balance controls
- ★ Headphone socket
- ★ Very easy to connect
- ★ Compatible with all software/hardware

★★ Free stereo headphones with all orders for a limited period ★★

Amiga Soundblaster is just £39.99 including VAT and P&P

SIREN SOFTWARE TEL 061 228 1831
2-4 OXFORD ROAD, MANCHESTER M1 5QA

Access VISA

ond line with a number of program options. When any one of these is selected a small explanatory message or sub-menu appears in the third line of the display. The rest of the screen is devoted to the spreadsheet proper with the cell cursor moved with the arrow keys in the normal way.

All sheeted down

A Digicalc spreadsheet can have up to 512 rows of up to 52 columns, and unlike many other spreadsheets you can fill every cell, even in a 512K ST. As you move around the spreadsheet, the contents of the current cell flashes through the edit line and you can edit any cell by typing [Ctrl]E. Commands on the menu can be accessed by clicking on them with the mouse or by pressing [/] from the keyboard, followed by the initial letter of the option.

Several of the menus offer further options from subsidiary menus. The choices are largely self-explanatory, though some of the option titles look a little forced – as if they have been picked for their unique first letter. Thus you have ATTR to change cell or range ATTRibutes, OS to display a directory (being an Operating System function, and D having being used for DEL, to delete a row or column), and MISC for all the options that wouldn't fit under any other heading. Two options which are quite handy are UNDO, letting you recover from an inadvertent edit, and WIDTH, which sizes individual columns to the width of their contents.

Digicalc provides absolute and relative replication and defines ranges of cells with a colon between each reference. like A3:G23. You can insert and delete rows or columns at any point and give each column a text title in addition to its reference letter. You can also assign any command or piece of text to any of nine function keys. This can be particularly useful for repetitive titling, or can be used to provide extra functions not directly available from within the program. Four keys are already defined for you which do useful things like returning to cell A1, displaying a directory of the current drive, wiping the entire sheet and printing out.

You can print the entire spreadsheet results or just the formulae from it, and can include column titles or not. There is also a facility to export the sheet as an ASCII file, but none to import files from different formats. It would be useful, for instance, to be able to import data from the PC's Lotus 1-2-3, since the ST can read PC disks.

MAX + MIN SIN ROUND LOG

When it comes to the supplied mathematical functions, Digicalc has the bare essentials, but nothing spectacular. The standard arithmetic functions are there, plus SQRT, SUM (to total several cells), LOG, LOGTEN, MAX, MIN and EXP. The trigonometric functions SIN, COS and TAN are also there as well as modification functions like ABS, ROUND and TRUNC. The quick reference card heads all these as 'statistical functions, though, which is stretching a point. The only function which can really be claimed useful for statistics is COUNT which counts the number of items in a range. A more important omission is conditional cell testing. It's very useful, for instance, to be able to say 'if the contents of cell A1 is negative, copy 'DR' into cell B1. Bank managers use this a lot when they work out who's run into the red that month.

Against these shortcomings it must be said that Digicalc is very fast. It can recalculate an entire 26624 cells with a simple addition inside 40 seconds. This is quite a spectacular speed, with similarly priced products either refusing to calculate a sheet of that size or taking many minutes to do it.

Digicalc has no graphics facility whatever. While this is not a pre-requisite for a spreadsheet, graphical output is provided by several of the competing products and is very useful for illustrating figures with impact – a bar graph speaks louder than five columns of figures. Digita are bringing out a graphics package later this year which will take files from Digicalc and related business products, but it would still be an improvement to have simple graphing included in the price.

Spreading: the final word

Digicalc is a fast, solid spreadsheet which will provide many people with all they need in this type of product. There are a few shortcomings, particularly the lack of graphics output, but overall most users will find this package good value.

THE COMPETITION

Two of the main competitors to Digicalc on the ST are GraphicSheet from Glentop and MasterPlan, distributed by SDL. Graphicsheet is the same price as Digicalc and as its name suggest, majors on graphic output from it's GEM interface spreadsheet. It calculates considerably slower than Digicalc but has all the pull-down menus and resizable windows that you expect from GEM. It also runs in colour, which you may find of value. The function list is largely the same as Digicalc's with the addition of comparative and logical commands, like AND and OR.

MasterPlan offers just about everything GraphicPlan does, including its GEM interface, and then some. 'Some' in this case is a wide variety of financial and statistical functions as well as the regular mathematical ones offered by the others. It is also particularly good at interfacing with other programs. It can read .WKS files, which means it can directly load Lotus 1-2-3 files, and can output files compatible with Degas and Publishing Partner. It comes in at £89.95.

On the Amiga side, MaxiPlan from Oxxi Systems is the big boy – it goes for about $195, but is fairly full featured. K-Spread 2 from Kuma is the budget choice (£49.95). Users of The Works package given away with the current Amiga bundling deal will also have access to Analyze!, a cheap and cheerful performer.

TEST CASE

Digicalc lets you set a password for entry to a spreadsheet, to safeguard sensitive data. The password is tested for the case of each letter, so 'AGNES' and 'agnes' won't do if 'Agnes' was stipulated as the armadillo, sorry, password.

AMIGA DIFFERENCES

This review is based on the ST version of Digicalc, but the Amiga version is due out by the time you read this and is promised to be a straight port of the program. As such you should expect very little difference between the two, other than the program running under Intuition rather than GEM.

The program is written in C, which makes it easy to convert from one machine to another. It does mean, though, that few of a particular micros facilities are taken into account. To some extent the program has to be written for the lowest common denominator.

for

- **Fast recalculation speed**
- **Holds full sheet entirely in memory, even on a 520**
- **User defined function key macros**

against

- **No graphics**
- **No GEM interface**
- **No comparison functions**

features 0 1 2 3 4 5

performance 0 1 2 3 4 5

ease of use 0 1 2 3 4 5

manuals 0 1 2 3 4 5

format value 0 1 2 3 4 5

TOP QUALITY DISKS AT ROCK BOTTOM PRICES

SILLY SUMMER SALE

5.25" BULK PACKED-TOP QUALITY ..... 25 ..... 50 ..... 100 250

Single Sided 48T.P.I	£9.97	£17.58	£30.88	£39.43	£58.43
Single Sided 96T.P.I	£10.21	£18.05	£31.83	£40.85	£59.85
Double Sided 48T.P.I	£10.45	£18.53	£32.78	£42.75	£62.70
Double Sided 96T.P.I	£10.93	£19.48	£34.20	£44.18	£66.03
Double Sided Coloured 96T.P.I	£13.06	£24.46	£46.08	£62.23	£94.76
Double Sided Reversible*	£14.25	£27.08	£47.98	£64.13	£97.38
Coloured & Reversible*	£16.39	£31.11	£60.08	£81.94	£123.26

Coloured Disks come in five colours (Red, Blue, White, Yellow, Green). Reversible disks have two index holes and two notches! Reversible disks work with 40T or 80T (48T.P./96T.P.I) Coloured and reversible disks come in five colours and have two holes and notches. All Centec disks are packed with a protective jacket (envelope) and come with a full user set, including a label and a write protect tab. The disks are manufactured to top international standards and have a hub ring for added protection. All disks carry our no quibble replacement guarantee and are certified 100% error free.

THE FAMOUS CENTEC DISK & BOX OFFER!

We can be copied on style but not on quality and price!

3.5"	5.25"
3.5" DS/DD 80 Disks & 80 capacity Box-£69.95	5.25" DS/DD 100 Disks & 100 Capacity Box-£29.95
3.5" DS/DD 40 Disks & 40 Capacity Box-£39.95	5.25" DS/DD 50 Disks & 50 Capacity Box-£19.95

All disks are sent by Transaction or Courier Service at no extra cost

STORAGE BOXES - NEW RANGE

(All boxes are anti-static, come with lock,
2 keys, dividers and are hinged
3.5" 120 capacity lockable £8.95
5.25" 140 capacity lockable .. £8.95
ANY TWO FOR £13.99
ANY THREE FOR £19.99

STORAGE BOXES

Anti-static, two keys, hinged + dividers
Mouse Racked £5.95

3.50" Lockable - Holds 40 ..... £5.95
3.50" Lockable - Holds 80 ..... £6.95
5.25" Lockable - Holds 50 ..... £5.95
5.25" Lockable - Holds 100 ..... £6.95
ANY TWO BOXES FOR £11.95
ANY THREE FOR £14.95

JUDGE FOR YOURSELVES
You'll be guilty of paying more & getting less if you go elsewhere

PROFFESSIONAL PRINTER STAND

This new printer stand is very space efficient as it takes hardly any more room than your printer. Due to the unique positioning of the paper guide mechannism and refold compartments that is one above the other, the desk space is effectively halved. The space saving design allows easy access to the paper from both sides, the special dial controlled paper feed system with adjustable deflector plates ensures smooth paper flow and automatic refolding.

80 Col £19.95
132 Col £24.95

Same Day Despatch

3.5" TOP QUALITY BULK PACKED DISKS

	10	25	50	100	150	200
Single sided 135T.P.I	£9.49	£22.95	£41.95	£79.95	£116.95	£154.95
Double Sided 135T.P.I	£9.95	£24.95	£43.95	£81.95	£119.95	£158.95

RAINBOW PACK OF FIVE COLOURS - *NEW LOWER PRICES*

Single Sided 135T.P.I	£12.49	£23.95	£46.95	£91.95	£129.95	£169.95
Double Sided 135T.P.I	£14.49	£26.95	£52.95	£98.95	£145.95	£189.95

Rainbow disks are available in Blue, Red, Green, Yellow and Orange
Packs of 10 3.5" Disks come with Free Plastic Library Case (worth £1.49)

VISA

CENTEC DISK SUPPLIES

All disks are supplied with labels and are certified 100% error free.
UNIT 3, THE METRO CENTRE, BRIDGE ROAD, ORPINGTON, KENT BR5 2BE
TEL: *(0689) 35353 (6 Lines) (24 Hours)* FAX: *0689 77737*
Please note we operate a call stacking system. Outside office hours a telephone answering machine will take your order. Remember - all prices include VAT and delivery! There are no hidden extras to pay! Personal callers welcome: *Monday-Friday 9.30am-4.30pm*

Computer Adventure World

WE STOCK OVER 300 TITLES AT OUR STORE & SPECIALISE IN

ADVENTURES-FANTASY-WARGAMES-STRATEGY

LATEST ATARI ST TITLES

WARSHIP ... From SSI, Tactical Naval Combat in Pacific in WWII £39.50
BATTLE FOR THE ATLANTIC .... 1940 to 1945 in WWII £35.00
STALINGRAD CAMPAIGN ..... June 1942 on the Eastern Front £35.00
FALL GELB ..... Spring 1940, Blitzkreig & the Fall of France £35.00
FIFTH ESCADRA ..... Modern Naval Conflict in the Med.Sea £35.00
GREY SEAS GREY SKIES ..... Modern Tactical Naval Conflict £35.00
SEVENTH FLEET ..... Modern Naval Combat in the Pacific £35.00
GOLAN FRONT ..... The 1973 Arab-Israeli War in the North £35.00
GREAT BATTLES ..... Austerlitz, Waterloo, Shiloh and Gettysburg £34.00
EMPIRE ..... Grand Strategic Global Conflict, Modelled on WWII £34.00
BREACH ..... Command a Squad of up to 20 Space Marines £34.00
BREACH SCENARIO DISC ... Add a Further 16 Scenarios to Above ... £19.00

LANCE HAFFNERS 3 IN 1 FOOTBALL (US) .. Complex, but the Best .. £32.50
MICROLEAGUE BASEBALL .The Most Detailed Simulation Available . £42.50
M'LG.B'BALL MANAGERS / OWNERS DISC ..... Adds to Above £25.00
M'LG.B'BALL TEAMS DISC .... All the Players Rated for the Above £20.00
GRIDIRON ..... Call the Plays, See the Action, BUT 1 MegByte only £39.00

LATEST COMMODORE AMIGA TITLES

PALADIN ..... You & up to NINE Fantasy Characters on a Quest £35.00
EMPIRE ..... Grand Strategic Global Conflict, Modelled on WWII £34.00
GETTYSBURG ... Award Winning Portrayal of the Civil War Battle £25.00
BARDS TALE II ... From USA - We Can't Wait for the UK Distributor £39.00
REACH FOR THE STARS ..... From SSG, Conquer the Universe £24.50
STARFLEET ONE . Part 1 of a Six Part Series, Tactical Sci-Fi Combat £24.50
CHUCK YEAGER'S AFT .,. Should be Available Now-Please Check £24.50

LATEST "OFFICIAL" HINT BOOKS: **(IMPORTED FROM THE USA)**

DUNGEONMASTER - ALL IS REVEALED IN ENTERTAINING FORM .. £8.95
ULTIMA III OR IV - If your stuck, these will put you right , well maybe ... £7.95
BARDS TALE I OR II - Fully Mapped .... £6.50 : We also have III £8.95

SEND LARGE SAE FOR FREE 20 PAGE LIST - MANY FORMATS
***PAYMENT*: VISA - MASTERCARD - UK CHEQUE - EURO OR GIRO CHQUE**
***POSTAGE*: UK FREE - PER GAME ..... EUROPE £2.00 ELSEWHERE £4.00**

Computer Adventure World

Bank Buildings, 1A Charing Cross, Birkenhead L41 6EJ
Telephone: 051-666 1132

EDUCATIONAL SOFTWARE FOR THE ATARI ST

DO YOU OWN AN ATARI ST?
IS YOUR CHILD AGED 4...11?
DO YOU CARE ABOUT THEIR EDUCATION?
IF YOU ANSWERED 'YES' TO THE ABOVE
QUESTIONS READ THIS...

'SOFTSTUFF' are a software company concerned only with educational packages for the primary school age group. All our material is written by a computer lecturer - Developed with a primary school headteacher - Reviewed by teaching staff - Tested by children -

We have just released 'spell book 4-6' and 'spell book 7+'. A simple BUT HIGHLY EFFECTIVE SPELLING AID for the two age ranges. 'Spell book' is COMPLETELY MOUSE CONTROLLED WITH ALL SPELLING DONE IN lower-case letters FROM THE SCREEN. With a game like atmosphere for 1-2 players it makes learning enjoyable. 3 difficultly levels with points awarded for correct answers and favourite tunes throughout and a final score table

Additional spelling disks are available for both age ranges which can be run with either version of 'spell book' so you only purchase 'spell book' once and then choose the disks for the age group as you need them

.....

'spell book 4 - 6' and 'spell book 7+' are available for £19.95 including VAT and 1st class p+p in UK (please phone if outside). Additional spelling disks are available for £9.95 (same applies)
All orders are despatched same day where possible -
NO CHEQUES CASHED UNTIL GOODS SENT.

Yes I Do Care About My Child's Education. . Please Send Me. . .
spell book 4 - 6 ☐ 'spell book 7+' ☐
And a list of additional spelling disks

NAME _____

ADDRESS _____

_____

Please make cheques and PO's payable to Softstuff and send to....
SOFTSTUFF Dept STAM, 193 Sketchley Road, Burbage, Leicestershire. LE10 2DY
Telephone (0455 617426)

QUICKIES

Learning to spell, or past that stage and learning to type? Either way, there are programs out there that may help. Sue Taylor and assistants try out two.

INTELLITYPE
Amiga only
£24.95 ■ Electronic Arts ■ 0753 49442

If you want to read a racy tongue-in-cheek adventure story from California and become a zowee typist at the same time, then *Intellitype* claims to have it all together.

Intellitype is a very flexible program designed for use as a 30 day course of 45 minute lessons. The manual is easy to read and contains essential advice on the program itself; how to pace yourself and how to tailor the program to your individual needs. It personalises itself to your age, initial skill and visual dependence on the keyboard and lets you set your own priorities, such as speed or accuracy.

The drills themselves are fairly conventional, although the TypeRope drill is worthy of mention: a neatly drawn artiste steps the high wire as long as you hit the right key, though, her digitised screams when you get it wrong could lead the nervous to further error! The main lessons form a raunchy and fast-moving storyline, guaranteed to keep your fingers on the keys.

Intellitype doesn't encourage you to head straight for the most spectacular results, as other more gamey typing tutors do, but gives you solid advice and guidance for better typing habits. One of its most appealing features is its constant reassurance that you're 'doing OK', which minimises any bad vibes from its rapid pointers to your weaknesses. Each lesson recommends a specific correction of posture or finger movement to aid the skill on which the lesson concentrates.

Once a lesson's over you can spend tortuous minutes analysing your errors. The program provides a wealth of bar charts covering your accuracy and speed with each key on the keyboard. Clicking on a given letter's bar calls up your average speed on that key and other handy information.

You'd do very well to find a human typing tutor as thoughtful and perceptive as Intellitype. The quality of analysis and attention to detail are very helpful and its author, Moses Ma (it really is that way round), has certainly put his Caltech training to good use.

features	**4.0**
performance	**4.5**
ease of use	**5.0**
manuals	**3.5**
format verdict	**4.0**

SPELL BOOK
ST only
£19.95 ■ Soft Stuff ■ 0455 617426

Spell Book comes in a smart little orange folder styled like a child's first school book, with a small leaflet of guidelines for parents. After the usual round of introductions, names, hellos and options for 1 or 2 players, the first screen shows 4 bright pictures, each containing a letter of the alphabet.

Clicking on a picture opens a 'book' with that picture on one page. To spell a word, the child selects letters with the mouse and clicks them into place on a dotted line with one gap per letter of the word. At the end of each try the score is marked up on a separate 'blackboard' screen, and one of five jolly little nursery tunes rewards correct spellings. There's a good variety of words, ranging from 2 – 7 letters, and they're not all the standard old boring ones, like T for Tapir.

It's good to see software for very young children which they can use on their own. It *does* give 5 year olds a great sense of achievement if they are able to operate the computer independently. The main attraction of spell book is that it works entirely with the mouse; beginner-readers don't have to struggle with capitals on the keyboard.

We tested Spell Book on Matthew (6) and Tom (5). They liked the program; they were encouraged by the easy-to-read instructions and enjoyed the graphics too. Some of the tunes were none too recognisable though. The boys were disappointed that the three different levels of difficulty all had the same words and pictures, the only difference being less flexibility in marking. Extra points are not really adequate reward for an ace speller of this age. More pictures are available, but at £9.95 a set.

Tom had a bit of trouble positioning letters (you have to hold down the right mouse button as you slide the letter into place); it certainly wouldn't be easy for an impatient 4 year old. The lower level of competence is labelled 'not very good' – a bit of negative psychology in an otherwise sensitive program. It can't be helpful for children to select themselves as 'not very good'. Overall, though, the program has a solid feel to it, and a fresh approach enhanced by the minimum of fussy little extras like smiling faces.

Two companion programs, *Maths Book* and *Shapes and Colours Book*, are due out soon.

features	**3.5**
performance	**3.5**
ease of use	**4.0**
manuals	**3.5**
format verdict	**4.0**

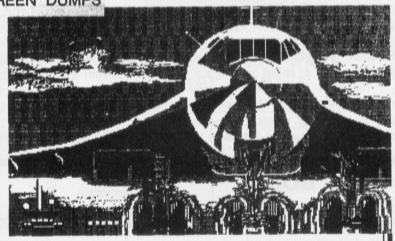
RATS FOR ARTS SAKE

After an afternoon's work with Intellitype, you become all too acutely aware of the type of errors you're making. Rats for Arts is a 'transposition' and bbok for book is a 'doublers' error. Other goodies include latency, cross hand and spurious shifting (which isn't fidgetting in your seat!).

Dare you Try ?

BOMB DISPOSAL

ACTUAL SCREEN DUMPS



The designers, programmers and artists at Classic Software welcome you to a new concept in computerised entertainment. From the moment you first boot up Bomb Disposal you will realise that this is no shoot 'em up arcade game or graphic adventure game, **you** are the trainee bomb disposal expert, with a steady hand and steel nerves. If you are faint hearted or of a nervous disposition we suggest that you revert to a less nerve racking and explosive game.

CLASSIC SOFTWARE

Avilable only from CLASSIC SOFTWARE

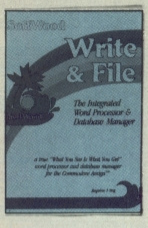
Send Cheque or P.O. for £19.95 inclusive To: PO Box 8. Sandown. I.O.W. PO36 8LT

☎ *Credit Card Hotline 0983 864674 or 0983 405600*

VISA

REVIEW

WRITE & FILE



To word process, you need facts; to manipulate data, you need a printout. Write & File seems to offer the ideal solution – an integrated WP and database in one program. Ben Taylor administers the acid test.

Amiga, requires 1MB ■ £99.95 ■ Softwood/HB Marketing, Brooklyn House, 22 The Green, West Drayton, Middx UB7 7PQ ■ 0895 444433

Since there are already 33 million word processing packages available, it's pretty hard for a new one to cause any surprises. However, the WP part of *Write & File* manages to do just this by virtue of a superbly designed screen layout and user interface.

As per most mouse-driven packages, in addition to the menu system there are icons to be clicked-on around the sides of the main work window. Write & File boasts what might be called an 'intelligent mouse' – as soon as the pointer is over any gadget it becomes a small text box explaining what is about to happen. For instance, when you move the pointer into the ruler area the cursor becomes a box saying 'Set Tab', which tells you that if you click there you will set a tab stop.

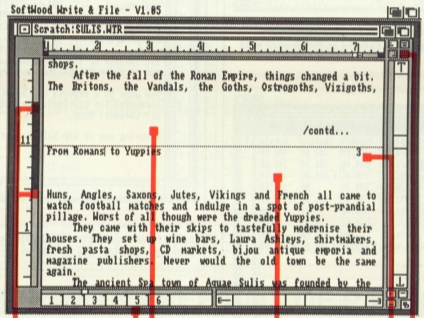
This system is brilliant. The main failing with most WIMP systems is that the icons programmers choose are often clear only to them, so you still have to use a manual to find out what they do! With this explanatory text system, you quickly learn by trial (but not error) what each icon does.

As to the word processing functions themselves, all the basic ones are present and work well. The find-and-replace operation allows you to choose whether the search should be case sensitive or not. Searching is fast, but replacing is slow; to find a word at the end of a 90k document took 10 seconds, to replace a word occurring 30 times in the same document took about 4 minutes. There is no facility to import graphics into documents, nor are there any keystrokes for go-to-end-of-line, delete-current-line, and other editing boons.

The thorny problem of headers, footers and page numbers is handled very well. Initially you have a four line region for headers and footers, but you can alter the depth simply by dragging them to size with the mouse. The header and footer areas are displayed at every page break, so you get true WYSIWYG for each page. There are special options to insert the current page number or date. These aren't once-off insertions of text but are updated dynamically – if used in a header the page number is updated for every page.

Write & File has a large spelling checker with three dictionaries: a 1,500 word 'common' dictionary, a 100,000 word main dictionary, and a user dictionary for your own words. Because the program is so large, a mere 1MB of RAM (!) isn't enough to hold it and the whole dictionary, so spell checking is slow. For some reason when an unknown word is found a requester box appears saying 'Unknown Word Found. OK?' – you've

■ *Write & File's word processing screen.*


SoftWood Write & File - V1.05
Scratch:SULIS.WTR
shops.
After the fall of the Roman Empire, things changed a bit. The Britons, the Vandals, the Goths, Ostrogoths, Vizigoths,
/contd...
From Romans to Yuppies
3
Huns, Angles, Saxons, Jutes, Vikings and French all came to watch football matches and indulge in a spot of post-prandial pillage. Worst of all though were the dreaded Yuppies.
They came with their skips to tastefully modernise their houses. They set up wine bars, Laura Ashleys, shirtmakers, fresh pasta shops, CD markets, bijou antique emporia and magazine publishers. Never would the old town be the same again.
The ancient Spa town of Aquae Sulis was founded by the

■ *Alter the header/footer depths simply by clicking here and dragging them to the size you want*

■ *Footer zone for page 2*

Header zone for page 3

Page number automatically updated

■ *Click here to jump to the numbered page*

The justify text left, right, centre or flush, tools ■

MACALIKE

Write & File's designers seem to be Apple Macintosh fans, since it uses a lot of the Mac-standard key shortcuts. Using Amiga-V for Paste, for instance, will confuse many people, but delight Mac users. Also Mac-like, if you've got a block of text selected you can just type away and your new text entirely replaces the old block – a very efficient way of editing. ■

EVERY SILVER LINING HAS A CLOUD

Despite the extremely high general quality of Write & File's design, there are a few problems.

Most serious is printing in Graphics mode. You can use any Amiga font in a document, and when you come to print you can either print as graphics (for true font images) or as standard ASCII and use your printer's NLQ font. On the review copy the Graphics print mode would not work. Even with a one word document using one font only, there was 'Not Enough Memory' and our A2000 crashed.

Annoyingly for A2000 owners, Write & File doesn't recognise drive DF2: – it assumes your drives are DF0: and DF1: as on an A500. This means you can't have your data disk in your second drive. The program never puts up standard requester boxes if you have the wrong disk in – instead it either waits silently for the right one (and appears to have locked up) or aborts its current command.

In the database, the calculated field option seemed unrobust. If you alter a numeric field's format, to make it display a £ sign for instance, the arithmetic suddenly ceases to work.

got to click OK *every time* to get to the lookup or replace functions.

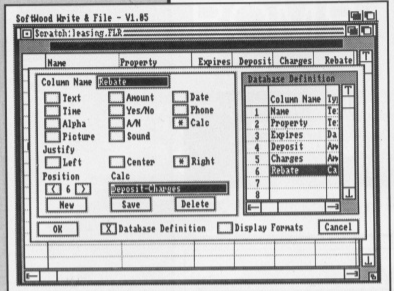
The database

Write & File's database is a fairly simple filing system rather than a superslick card index to compete with the *Superbases* of this world. It presents its records all at once in a table with one row per record, one column per field. You use the standard scroll bars to move around the data window. It behaves very much like a spreadsheet – you click on the cell you want to edit, and you can enter or edit data in any order.

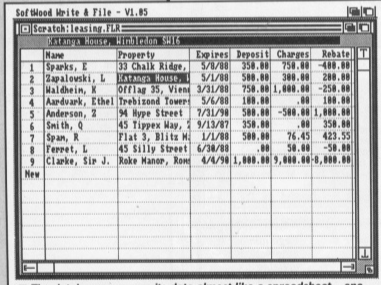
When you set up the database, as ever you have to name your fields and decide what they are going to be used for – text, dates, numbers and so on. A menu guides you through this, with 11 different types of field allowed. If you choose a date field, for example, data you enter is checked for legality – no 31 day Februaries allowed! Unfortunately, you've got to enter dates in American format, mm/dd/yy. 'Calc' fields have their contents arithmetically calculated from other (numeric) fields in the record. For instance, if running a leasing agency you might define a field 'Rebate' to be the the deposit paid less any charges for damage. You can have up to 32 fields, and you can alter the database structure at any time even after data has been entered.

With an integrated WP and database package, you would expect mail merging to be a doddle, and it is. First you write a template letter, with the names of the database fields in angle brackets, eg. <Name>. You need to have the letter file and the database open at the same time, then in the database you use the Select function to filter your records, for instance, 'All tenants whose leases expired before 5th April 1988'. Selection, and sorting, can be done on any field of the database, and is pretty quick.

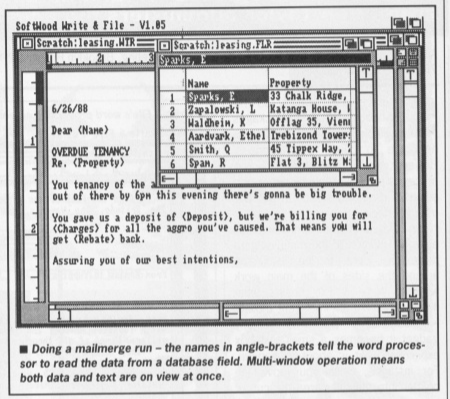
Once the data is set up, you click on the Send to WP option, activate the WP window and choose Print Merge. You've got to do a print merge for any database printouts; even to get a simple list of data you would set up a dummy letter with only the field names and print merge that.



■ *Defining a database. Fields can be any of 11 predefined types including 'calculated'. Here the rebate is defined as the deposit paid minus the charges accrued.*


SoftWood Write & File - V1.05
Scratch:leasing.FLR
Katanga House, Wimbledon SW19
Name
Property
Expires
Deposit
Charges
Rebate
1 Sparks, E 33 Chalk Ridge, 5/8/88 350.00 750.00 -400.00
2 Zapalowski, L Katanga House, 5/1/88 500.00 300.00 200.00
3 Waldhein, K Offlag 35, Vienn 3/31/88 750.00 1,000.00 -250.00
4 Aardvark, Ethel Trebizond Tower 5/6/88 100.00 .00 100.00
5 Anderson, Z 94 Hype Street 7/31/98 500.00 -500.00 1,000.00
6 Smith, Q 45 Tippex Way, 9/13/87 350.00 .00 350.00
7 Span, R Flat 3, Blitz Ma 1/1/88 500.00 76.45 423.55
8 Ferret, L 45 Silly Street 6/30/88 .00 50.00 -50.00
9 Clarke, Sir J. Roke Manor, Rowe 4/4/90 1,000.00 9,000.00 -8,000.00
New

■ *The database arranges its data almost like a spreadsheet – one record per row, one field per column. Column rules can be dragged by the mouse. You can click on any cell in any order and enter or edit data.*


SoftWood Write & File - V1.05
Scratch:leasing.WTR
Scratch:leasing.FLR
Sparks, E
Name
Property
1 Sparks, E 33 Chalk Ridge,
2 Zapalowski, L Katanga House,
3 Waldhein, K Offlag 35, Vienn
4 Aardvark, Ethel Trebizond Tower
5 Smith, Q 45 Tippex Way, 2
6 Span, R Flat 3, Blitz Ma
6/26/88
Dear <Name>
OVERDUE TENANCY
Re. <Property>
You tenancy of the a
out of there by 6pm this evening there's gonna be big trouble.
You gave us a deposit of <Deposit>, but we're billing you for <Charges> for all the aggro you've caused. That means you will get <Rebate> back.
Assuring you of our best intentions,

■ *Doing a mailmerge run – the names in angle-brackets tell the word processor to read the data from a database field. Multi-window operation means both data and text are on view at once.*

Real partners

One very welcome novelty is that you don't define field lengths at all. Text fields are 64 characters long at most, but you can choose how much of each field you actually want to see when you display it. Using the mouse, you just drag the column rules around as you like. This way you can hide fields altogether if they are irrelevant, or arrange to only see the initial letter of each field.

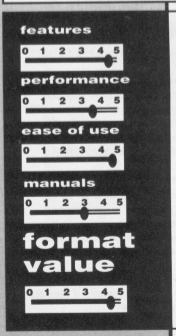
There is no report generation function in the database; you are expected to use the word processor for all output.

Right & File?

"I have seen the future of word processing, and its name is Write & File." (That's an obscure misquote from horror writer Stephen King, in case you were wondering.) Without doubt, Write & File is the best designed word processing system on the Amiga. Its only drawbacks are that it needs 1MB of RAM, and it seems a bit buggy. Its use of the mouse is exemplary.

The database section links smoothly into the WP, but in itself won't replace a specialised database program. Text fields limited to 64 characters, and the lack of any control over screen presentation of data (eg. a form designer) prevent that.

If you've got a megabyte of memory, and you can live without importing graphics into documents, it's the best Amiga WP there is.



for

- Superbly designed user interface
- Good WP including 100,000 word dictionary
- On-screen header and footer display
- Arithmetic in database fields

against

- Can't import graphics
- A few 'implementation problems' (=bugs)

WE HAVE MOVED!

3½

Lifetime Guaranteed, double sided, double density, 135 TPI,bulk wrapped discs with labels

Quantity	Price
10	£9.25
20	£18.00
25	£22.99
50	£45.00
105	£89.99

5¼

Lifetime Guaranteed, double sided, double density, 48 TPI,bulk wrapped discs with labels

Quantity	Price
10	£3.50
20	£6.50
25	£7.99
50	£15.50
105	£31.00

NEW DISC PACKAGE DEALS

3.5 inch		5.25 inch	
40 discs + 40 cap. box	£39.99	50 discs + 50 cap. box	£17.99
80 discs + 80 cap. box	£74.99	100 discs + 100 cap. box	£34.99
120 discs + 120 cap. box	£114.99	140 discs + 140 cap. box	£45.99

LOCKABLE DISC STORAGE BOXES

40 capacity	£5.49	50 capacity	£5.49
80 capacity	£7.49	100 capacity	£7.49
120 capacity	£9.99	140 capacity	£9.49

Plastic Storage Box – holds 10 (state 3.5" or 5.25").....75p

AT LEAST 30% OFF ALL 16 BIT SOFTWARE

ALL PRINTERS NOW WITH FREE BOX OF PAPER

BRANDED DISCS – SONY, TDK, VERBATIM, DYSAN 3.5" DISC
FULLY GUARANTEED MEDIA – BEST PRICES IN UK!

HARDWARE
AT LEAST 10% OFF ALL HARDWARE

COMMODORE AMIGA A500 with 10 discs + mouse mat £369.99
ATARI - NEW 520 STFM Summer Pack Plus 10 Disc + M.mat...£369.99
EPSON LQ-500 24 pin letter quality printer £349.99
CUMANA 1Mb Disc Drive. State Atari/Amiga + 5 blank discs.....£109.99
** ALL COMPUTERS WITH VIRUS KILLER DISC! **

P&P Free on all orders over £15, under £15 add 75p P&P (UK only)
Overseas disc orders, add £3 P&P.
All prices include VAT!

Cestrian Software

52, Brook Street
Chester CH1 3DN
Phone 0244 312666
CALLERS WELCOME

UNBEATABLE PRICES

■ *Disney's Tron (1982) created a stir with its mixture of live action and computer animation. The Amiga and ST are catching up fast.*

GRAPHICS

Computer animation is becoming one of the most promising artforms of the 20th century. Switch on your television and it's a fair bet that within a few minutes you'll see some impressive examples; whether in the title sequences of a gameshow, the animated diagrams of a news report or the artistic indulgences of a high-tech advert. The most interesting examples often combine real images on video with computerised ones created entirely in digital form. Animated title overlays and psychedelic video effects created by such multi-thousand pound systems as Mirage and Harry are the most obvious instances.

Owners of the Amiga and ST are well-placed to become involved in this exciting field, because the 68000 processor at the centre of each micro is the same as that used in the professional graphics workstations. With the decreasing price of video technology such as VCRs, mixers and effects units, it's now possible to create professional-looking computer/video productions in your living room.

Sugar and splice

While anyone can videotape a computer image and intercut it with film, combining the two together requires some complex technology.

As most of you will realise, video images are created by using a scanning electron beam from a cathode to illuminate the yellow, blue and red phosphor dots on the TV screen at different luminance levels. To combine video and computer images meaningfully, you must selectively combine the two sets of colour information, usually eliminating colour 0 in the computer's palette (normally white or blue) to leave 'gaps' through which the video image can show.

It's also necessary to synchronise the timing signals which lock the computer and video to the scan rate of the cathode ray tube. The systems needed to do all this are referred to as 'genlock' hardware. Commodore's own genlock system for the Amiga 500 or 1000 costs around £200, though you can pay up to £750 for a genlock system depending on the type of facilities you demand. Sadly, there isn't yet a marketable genlock

STAR OF THE SCREEN

With their colour screens and fast processing power, the Amiga and ST are naturals as sophisticated graphics workstations. Chris Jenkins reviews Deluxe Video 1.2 for the Amiga and investigates the world of computer animation.

■ *Mike Posehn and Tom Casey (Mike has the beard), both ex Berkeley men with brains the size of several planets, put Deluxe Video together.*

system for the Atari ST, though several companies are working on it.

Of course, if you really have a penchant for expensive hardware, there's a massive range of home video equipment you can invest in. Camcorders, dubbing studios, mixers - you *could* spend a fortune.

However, you can make a start in computerised video without shelling out for extra hardware. Animations created by manipulating a series of graphic designs can form the basis of impressive video displays – if you have either the programming ability or the right software to get the results you want.

Tweeny boppers

The uses of computers in graphics and animation are many and varied. The main advantages, obviously, are that the computer can handle images in the same way that a word processor handles text; arranging, storing, editing, copying and generating graphics with any required degree of precision and complete repeatability.

Perhaps the most important computer application in animation is automatic 'tweening'. Traditional hand-animation relies on key frames drawn by senior artists. These define the major points of movement, say the lowest and highest positions of Mickey Mouse's leg. Drawing the dozens of frames in between these points – 'tweening' – is left to junior animators. In the case of computer animation, the micro becomes the junior, mathematically calculating the stages by which one image metamorphoses into another. Obviously, fast and accurate tweening routines make all the difference between a good and bad animation program.

DELUXE VIDEO 1.2

£69.95 ■ 512K Amiga, 2 drives recommended
Electronic Arts ■ 0753 49442

Electronic Arts, one of the first companies to put its weight firmly behind the Amiga, is now distributing an impressive series of graphics and animation packages as the Deluxe range. Claimed to be suitable for making everything from rock videos to business presentations, the Deluxe series integrates graphics, animation, sound and video. The packages are fully compatible with Commodore's genlock systems, using the 'colour 0' technique. But who should be interested in this sort of animated graphics package, and how much extra equipment do you need?

The real answer is (a) practically everyone, and (b) practically nothing. You may want to add captions to videos of family occasions, produce a business presentation, create your own pop vids or incorporate animated sequences into another program. In each case, Deluxe Video has something to offer.

Deluxe Video is one of the most powerful packages of its kind, and comes with four disks and a 100-page spiral-bound manual. It's designed to help you integrate pictures, objects, text and sounds into film-like audio-visual presentations. It allows you to use images from Deluxe Paint or Deluxe Print, and sounds from Instant Music or Deluxe Music. Indeed, any standard IFF images and sounds should be useable.

Intensive care

Deluxe Video is very disk-intensive, so a two-drive system is recommended unless you enjoy spending a great deal of time swapping disks.

The main workscreen is the Video Script display, from where you can zoom into sub-sections to perform microscopic edits. Pull-down menus appear as at the top of the screen. The Video Script screen is a sort of 'spreadsheet', showing the entire video in terms of tracks and events. Scroll bars allow you to move around the script, and at the top appears a timing display in seconds and sixtieths of a second ('jiffies'). At the left hand side is a capacity gauge which tells you how much memory space you have left to work with.

FIRST CATCH YOUR PICTURE

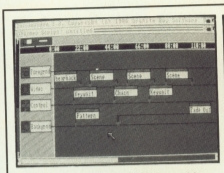
The simplest way to combine real and computerised images is with a video digitiser. This takes 'snapshots' of the analogue picture signals from videotape or a camera, and breaks them down into a digital form which can be saved as a standard graphics file, and manipulated using graphics package effects.

The Amiga is particularly well catered for in this area: examples of video image digitisers include DigiView, which works in any of the Amiga's resolution modes; Perfect Vision, which offers sixteen grey scales or 4096 colours; and VDAmiga, which digitises in real-time rather than in separate snapshots (but which costs £800).

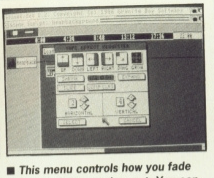
However, a more satisfying application is the combination of real and computerised images in the same picture. In fact the Amiga is already regularly used for this purpose in the production of the Channel 4 Chart Show series. Watch towards the end of the pop videos and you'll see typical Amiga icons and text boxes appearing over the video images.

SWEET SMUSIC

One of the best things about the Amiga is its standard file format. Rather than each company to devising its own way of storing data on disc, Amiga developers have standardised on the 'IFF' file format. This 'Interchange File Format' is a set way of representing graphics and music, and Deluxe Video conforms to this. As well as reading in standard IFF graphics files for the animation, Deluxe Video reads in SMUS music files. SMUS (for 'Simple MUSic') is an IFF filetype specifically for music, and most digitisers and audio packages will save data in this way.



■ *Setting up a script in Deluxe video. You can request the animation to pause and wait for keypresses.*



■ *This menu controls how you fade from one scene to the next. You can 'wipe' a bar up, down, left, right, diagonally or radially.*

Videos consist of up to five tracks, of four different kinds; foreground, background, control and music. Each has its own type of 'effects', giving a total of twenty-seven. You can create new track and effects box by dragging blank boxes from the top of the script page, and arranging them on the time-lines on the 'page'. Placing an effects box on a track line calls up an Effect Request box, where you can click on the type of effect you wish to insert. Any effect can be spread over any assigned time duration, so something like a fade can be as fast or slow as you require.

There are six types of 'wipes' available, by which one background moves over another. Wipes can move up, down, left, right, diagonally, or from the centre outwards. You can also specify the rate at which the colour palette of the old background fades to the new one, and the number of stages into which the wipe is divided. Foregrounds are made up of Objects, which can be taken from memory or from disk (it can read brushes stored by Deluxe Paint). You can preview an object by clicking on the TV icon in the request box, then place it anywhere on the background. Deluxe Video can only display seven colours in the foreground, so bear in mind the limitation when you're planning your video. If you want several different foreground objects, they must of course use the same colour palette.

Moving scenes

The 'Size' effect allows you to change the width or height of an object over the course of a specified time. In this way you can either create stretching effects, or the impression of an object moving towards you or away from you (in or out of the screen). A good example is the space shuttle sequence shown. Objects can be animated using the requester box AnimSeqn (no, you don't have to try to pronounce it). Each 'cel' of the image you wish to animate is assigned a letter. Up to forty letters can be chained together, each representing a display time of one-sixth of a second. Thus, the sequence 'aabbcd' would display cel one for two-sixths of a second, cel two for the same duration, then cels three and four for one-sixth of a second each.

You can synchronise music with your video, and for the soundtrack Deluxe Video can read any IFF file in SMUS format. You can preview music by clicking on the speaker icon in the request box, and you can choose which of the four tracks in each tune is played. Sound effects are added to videos in a similar way, and there are additional options such as volume changes.

The letter of the law

Text Requesters allow you to enter lettering using the standard Amiga fonts, or new ones stored on your work disks. Shadowing, underlining, and bold or italic effects can be added to your text, and there are various colour reverse, transparent and outline options which can be combined to create unusual results. Once you have written and positioned your text, additional options include movement, appearing and disappearing, and 'stamping', where the text or object, having finished moving, can be made part of the background, thus saving memory space. An alternative option, Polygon Text, allows you to define lettering not from two-dimensional fonts but from three-dimensional shapes. You can use preset polygons such as squares, triangles, stars, hexagons and diamonds, your own polygonal shapes and preset fill patterns.

The useful thing about polygonal text is that it lends itself to various impressive animation effects. You can, for instance, rotate around the X, Y or Z axes; expand, flip, or shrink the text, and move it around the screen at the same time. An impressive demo on the Deluxe disk uses polygonal shapes to create animated exploding pie and bar charts.

WHAT THE EYE DON'T SEE

So how does animation actually work? The effects depend on the computer fooling the eye into believing that it sees moving objects, rather than a series of still objects each in a different position. An effect known as 'persistence of vision', which is caused by the opto-chemical nature of the function of the retina, causes the series of images to 'blur' into an apparently moving object.

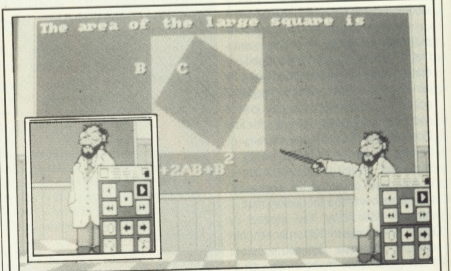
The secret is to show as many 'frames' as possible while keeping up the speed of the apparent movement. Conventional cinema projectors show 24 frames per second, although each frame is shown twice so you only see 12 different pictures a second. Television too works by persistence of vision, showing 25 frames per second. The software packages we're looking at can operate at around 60 fps, so the potential for convincing animation is there.

OTHER AMIGA VIDEO OPTIONS

DELUXE PRODUCTIONS
£139.95 ■ 1 MB Amiga ■ 2 drives recommended
Electronic Arts ■ 0753 49442

The newer software package Deluxe Productions is similar to Deluxe Video in may ways, but works only on one-meg systems. It boasts more colours that Deluxe Video's eight, and uses the Amiga's highest graphics resolution mode (while Deluxe Video uses the lowest) and has a wider selection of wipe and text effects. It is more geared than Deluxe Video is towards genlock users mixing computer graphics with video images from tape – titling, mosaics and so on.

While the Electronic Arts Deluxe Video packages are impressive, they are certainly not the only options for Amiga owners. Aegis' Videoscape 3-D, for instance, is a very powerful 3-dimensional modelling and animation program which uses basic shapes to create complex images. Details such as variable surface reflectivity, light sources and surface detailing allow you to create very realistic images. Motion, rotation, zoom and transformation options let you create animation effects with none of the traditional cel-by-cel techniques.



■ *Even education gets a look in. This is part of a riveting animated tutorial on Pythagorean geometry.*

NOW TAKEN

VISA

Castle Computers

CASTLE HOUSE
11 NEWCASTLE STREET
BURSLEM
STOKE-ON-TRENT
TEL: 0782 575043
(10 LINES)

ATARI ST SPECIALS

Fire and Forget	16.95
Road Blaster	13.95
Corruption	16.95
Side Arms	13.95
Beyond the Ice Palace	13.95

Bionic Commandos 12.95

Legend of the Sword	16.95
Starfleet 1	16.95
Buggy Boy	13.95
BMX Simulator	10.50
Seconds Out	13.95
Jinxter	16.95
Gold Runner II	13.95
Quantum Paint	12.95
Peter Beardsleys Football	13.95
Football Manager II	13.95
Alien Syndrome	13.95
Better Dead than Alien	13.95
Killdozers	12.95
Pandora	13.95
Thundercats	13.95
Uninvited	13.95

Virus 13.95

Shadowgate	16.95
Space Quest II	13.95
Sidewinder	7.50
Olds	13.95
Dungeon Master	16.95
Gauntlet II	13.95
Gettysburg	10.95
Mean 18	9.95
Soccer Supremo	9.95
Ikari Warriors	10.00
Pink Panther	9.95
Stellar Crusade	24.95
Vampires Empire	13.95
Bubble Bobble	12.95
Spitfire 40	16.95
Shackled	13.95

ATARI ST SPECIALS

Just Arrived More Infocom

Stationfall	12.95
Lurking Horror	12.95
Bureaucracy	12.95
Nord & Burt	12.95
Plundered Hearts	12.95
Ballyhoo	9.50
Trinity	9.50
Witness	9.50
Suspect	9.50
Planetfall	9.50

STOP PRESS

Q Ball	6.99
Road Runner	6.95
Stone Breaker	6.95
War Zone	4.95
Skulldiggery	7.95
Super Huey	6.99
Metro Cross	6.95

Return to Genesis	16.95
Bards Tale	16.95
Bards Tale 2	16.95
Tanglewood	13.95
Wargame Con Set	16.95
Warlocks Quest	13.95
Captain Blood	16.95
Carrier Command	16.95
Predator	13.95
Road Wars	13.95
Time and Magic	13.95
Annuls of Rome	9.95
Uni Military Sim	16.95
Tau Ceti	4.95
Academy	4.95
Trantor	13.95

ATARI ST SPECIALS

Foundations Waste	13.95
Degas Elite	16.95
Lords of Conquest	16.95
Impossible Mission II	13.95
Sky Fox	4.95

Mickey Mouse 13.95

Pool	7.50
Dark Castle	16.95

ST Adventure Creator RRP 39.95 ..... Our Price 29.95

Indoor Sports	16.95
Wizard Warz	13.95
Spy v Spy	7.95
Vixen	13.95
Outrun	13.95
Test Drive	17.95
Phoenix	7.95
F15 Strike Eagle	16.95
Extensor	4.95

Space Harrier 13.95

TIRED OF FAULTY SOFTWARE?

To extend the excellent service we already offer our customers we will now check every piece of software before we send it out!
As this service will take time and money we have been forced to increase our prices slightly.
Please remember we still use first class post.
CASTLE COMPUTERS!
The company that cares about it's customers!

AMIGA SPECIAL OFFERS

Garrison II	15.95
Rolling Thunder	16.95
Bionic Commandos	16.95
Fire and Forget	16.95
Ebon Star	16.95
Impossible Mission II	16.95
Carrier Command	16.95
Football Manager II	13.95
Xenon	13.95
Sidewinder	7.50
GB Air Rally	13.95
Jinks	16.95
Druid II	13.95
Black Lamp	13.95
Tanglewood	13.95
Peter Beardsleys Soccer	13.95
Gettysburg	22.95
Balance of Power	22.50
Wizard Warz	16.95
Road Blasters	16.95

JUST ARRIVED!
Little Computer People RRP 29.95..... Our Price 12.95

Army Moves	16.95
Platoon	16.95
Interceptor	17.95
Road Wars	13.95
Bubble Bobble	13.95
Sentinel	13.95
Firepower	16.95
Obliterator	16.95
Leatherneckx	13.95
Hardball	10.95
Mean 18	9.95
Time and Magik	13.95
Starglider	16.95
Star Wars	13.95
Arkanoid	16.95

AMIGA SPECIAL OFFERS

Aaargh	13.95
Alien Syndrome	13.95
Seconds Out	13.95
Protector	6.95
Space Station	6.95
Western Games	6.95
Firebaster	6.95
Warzone	6.95

JUST IN!

Bureaucracy	12.95
Leather Goddess	12.95
Lurking Horror	12.95
Hitchikers Guide to Galaxy	12.95
Nord and Burt	12.95

WHILE STOCKS LAST!

World Tour Golf 17.95

Trinity	9.50
Stationfall	9.50
Silent Service	16.95
Temple of Apshai Tril	5.95
Starfleet I	16.95
Marble Madness	16.95
Bards Tale 1	16.95
Bards Tale 2	16.95
Chessmaster 2000	16.95
Black Shadow	4.95
Borrowed Time	6.95
Mindshadow	6.95
Plundered Hearts	9.50
Pac Boy	4.95
Cutthroats	9.50
Ferrari Formula 1	16.95
Test Drive	16.95

AMIGA SPECIAL OFFERS

Space Fight	4.95
Shooting Star	4.95
Space Port	4.95
Photon Paint	46.95
Rocket Ranger	21.50
Jinxter	16.95
Stir Crazy	13.95
World Darts	7.50
Feud	7.50
Bad Cat	16.95
Fairy Tale Adventure	18.95
Destroyer	16.95
Dungeon Master	16.95
Dark Castle	16.95
Bermuda project	16.95
Beyond Zork	16.95
Sherlock Holmes	16.95
Shadow Gate	16.95
Slaygon	13.95
Warlocks Quest	13.95
SDI	21.50
Return to Genesis	13.95
Joe Blade	7.50
Marauder II	21.50
Hunty for Red October	16.95

Elf 10.95

Street Fighter 16.95

Cogans Run RRP 24.95...Our Price 6.95

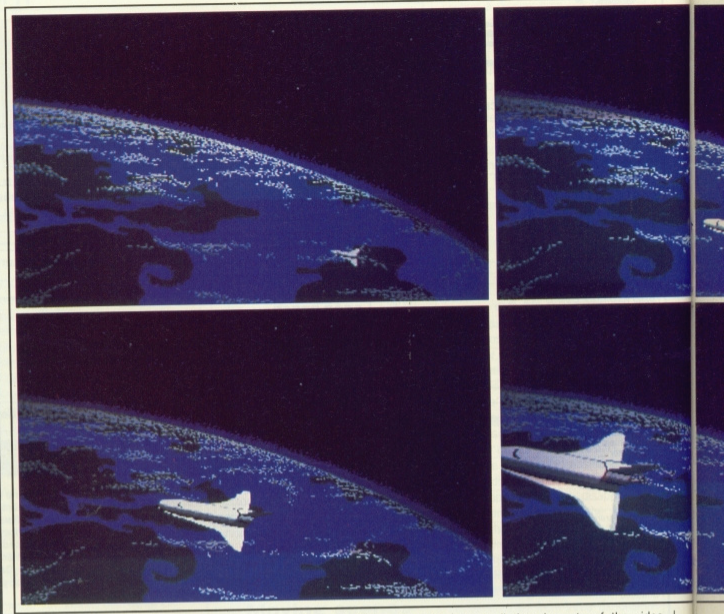
Ikari Warriors 16.95

Barbarian II 16.95

Any game not released will be sent on the day of release.
These are mail order prices only.
CASTLE COMPUTERS THE COMPETENT MAIL ORDER COMPANY

PIECE OF STRING

How long an animation can you store on a disk? How many angels can fit on the head of a pin? If your animations are very simple – maybe a fixed background and a foreground image scrolling slowly across it – then by taking advantage of the data compression techniques provided with Deluxe Video you can probably store 5 or 10 minutes of action on a single disk. With many frames of rapid and different action, you might only get 1 minute to a disk.



The Control track allows you to interrupt or manipulate the video while it's playing. Using the Chain function you can link together a number of videos, so you are never really limited by the capacity of the program. Options such as KeyChain allow the viewer to select which video is shown next, using text entry, while KeyWait simply pauses the video until any key is pressed. The menus at the top of the video script display allow you to save all the elements of the video, and to modify them by cutting and pasting elements. When you are playing through your video (either scene by scene or all the way through), clicking on the right-hand mouse button brings up a control display at the bottom of the screen. This looks like the hand unit of a remote-control video recorder, and in fact has many of the same functions. You can play, fast forward, rewind, pause or stop the video; mute the sound, loop the video and so on. A time counter ticks off the seconds and sixtieths.

Action replay

The 'Player' disk included in the package is, as its name implies, a play-only utility which can be copied to your data disks, so that you can show examples of your finished work to Amiga owners who do not have Deluxe Video.

Included on a third disk is The Framer, an animation program which offers more facilities than the limited routine in the main program. It allows you to use up to 99 frames, and call them into a Deluxe Video sequence using an 'Appear' effect. Also included on the third disk are VidCheck, which compresses your videos so they take up less disk space; and UnPack, which allows you to pinch bits from

FROM THEN TO NOW

Although the computer dimension has injected a new energy, methods of animation are nothing new. The techniques of fooling the eye into seeing motion were first demonstrated in the 19th Century with 'magic lantern' displays. Emile Reynaud's famous cantering horse sequence (1877) is a prime example.

On the film side, cartoons like Mutt and Jeff *emerged in 1910s and 20s. Walt disney was the man who set the scene alight with* Steamboat Willie *(1928), the first cartoon with sound, and Mickey Mouse's debut. The classic cartoon film of all time is, of course,* Snow White. *Released in 1937 it's now a staggering 50 years old and undergoing yet another re-release! Snow White has 477,000 frames of hand drawn stills. It took 2 years to produce, and almost bankrupted Disney.*

Slowly, computers crept into the business of special effects and animation. Disney's Tron *(1982) is a prime example of this. The backgrounds for the entire film were computer generated and the actors heads and body movements 'matted in' (superimposed). Unfortunately directors often get carried away with technology, and with Tron in particular it was a case on "Nice effects, shame about the plot."* The Last Starfighter *(1984) was much-hyped as the first film to have a lengthy sequence of pure computer-generated animation – about two minutes of spectacular graphics. Again, the rest of the film disappointed.*

George Lucas – famous as director of the Star Wars movies – set up his Industrial Light and Magic studio to generate special effects on contract for film producers. They use computers very heavily, but ST and Amiga 600 by 400 pixel resolution isn't quite good enough! To get true 35mm quality effects they use Cray supercomputers at $10-plus million apiece. Each frame of a sequence (remember there are 12 different frames a second) can take up to an hour to generate, so we're talking lots of money. Using computers isn't cheaper than hand animation, just slicker.

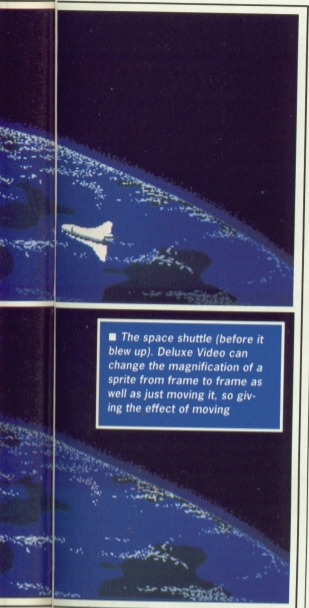
THE VIDEO SCENE AT LARGE

Considering that a convincing animation will contain at least twenty-four frames per second, it's not surprising that even a Mega ST or expanded Amiga soon becomes insufficient to create lengthy animations. The solution in most cases is to transfer your work to videotape, and in any case one of the most exciting features of computer animation is the possibility of combining video and computer images. Even if you are using domestic video recorders on the VHS or Beta standard, rather than professional U-Matic machines, there are many add-ons available which can be used in conjunction with your computer to create impressive videos.

The first necessity is a good video recorder with clean 'assemble edit' functions, and preferably a separate audio dubbing facility. The most useful add-on is a video mixer, such as the Sansui VX22. At around £470, this can combine signals from audio sources, video tape and a video camera, and create effects such as fades, wipes and colour distortions.

Another useful extra is a simple mono video camera at around £100. This can be used with an image digitiser, and by adding a series of coloured filters over the lens you can add false colours to the image. Alternatively, the world's cheapest camera/recorder (camcorder) is forthcoming from Amstrad. This uses the VHS-C system and will cost around £499. For around £100 you can obtain picture enhancers from Vivanco and JVC. These will clean up your video signal as you copy from one tape to another, and can also be used to create unusual colour effects.

A forthcoming video mixer from Panasonic will offer the first affordable a 'time base correction' facility, allowing you to lock together two signals from separate video tape sources. In conjunction with a genlocked computer, the possibilities will be mind-boggling. At the moment, it looks as if music is the biggest growth area among computer users. As video equipment falls in price, and innovations such as satellite and cable TV expand our awareness of the capabilities of video, it may well be that computer/video graphics systems will be the next big thing in the home computer field.



■ *The space shuttle (before it blew up). Deluxe Video can change the magnification of a sprite from frame to frame as well as just moving it, so giving the effect of moving*

other videos and use them in your own.

Overall, Deluxe Video is a very impressive animation cum home video editing package at a keen price. A couple of drawbacks are that you can only use 8 colours on screen at once, which is annoying given the Amiga's capabilities, and there is no pixel editing ability at all. You can't retouch pictures in Deluxe Video itself – you need a dedicated art package to prepare things with. More advanced users might prefer to go for the costlier Deluxe Productions.

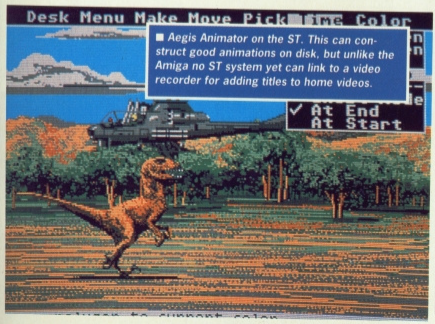
What can the ST do?

The alternatives for ST users boil down to two main contenders; Mirrorsoft's Film Director, and Aegis' Animator.

Film Director works with picture files from Art Director, Degas or Neochrome, which provide the background scenes and foreground sprites. You can also create polygonal shapes at any start and end point, and set the tweening process to create up to 99 intermediate steps. Film Director's major drawback is that it lacks rotate functions for objects. If you wish to show, say, a spinning ball, you must create sprites for each required orientation separately, then tie them together in an animation using the Group Editor functions. Up to two thousand frames of animation can be created using the Frame and Sequence Editor facilities to place elements on the backgrounds and move them through time. Object priorities can be defined and sound effects added at this stage too. Oddly enough you can't create your own music.

There are no facilities of the fade-and-wipe kind found in Deluxe Video on the Amiga, though another ST program, in some ways more impressive than Film Director, fits the bill better.

This is none other than Aegis Animator. It uses both polygonal and sprite-based animation techniques, again using files created with either Degas or Neochrome. You can build up a library of polygons, apply moves, X/Y/Z rotations, zooms and colour changes, and have the program calculate the tweening stages. Polygonal and object animations can be combined in films of up to 9999 frames, and timed to within 1/60 of a second. You can edit up to six 'storyboards' simultaneously, with miniature versions of the complete animation running in separate windows. You can cut and paste from one storyboard to another, and use colour cycling and palette change techniques to create fades and cuts. However, it has nothing of the complexity of Deluxe Video's wipes or abilities to interface with external video equipment. ■



■ *Aegis Animator on the ST. This can construct good animations on disk, but unlike the Amiga no ST system yet can link to a video recorder for adding titles to home videos.*

Deluxe Video 1.2

for

- Synchronises music with images
- Many types of fade and wipe
- Images can be resized to imitate distance effects
- Text can be rotated and superimposed

against

- Only 8 colours at once
- No pixel editing facilities for touching up

features 0 1 2 3 4 5

performance 0 1 2 3 4 5

ease of use 0 1 2 3 4 5

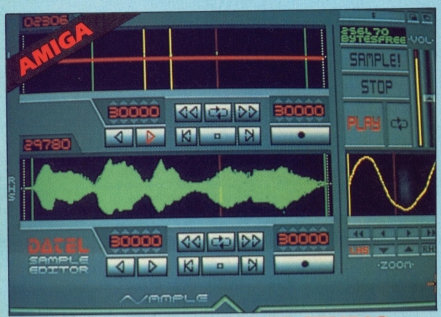
manuals 0 1 2 3 4 5

format value 0 1 2 3 4 5

UNNATURAL ADDITIVES

The eye sees colours in funny ways. At school you were probably taught that the primary colours are red, yellow and blue. Yellow and blue make green, and that sort of thing. Well, that's true as long as you are talking about mixing phosphors with *emitted* light, like from a TV or monitor screen. With *reflected* light, such as you see when you mix inks as on this page of the magazine, the primary colours are magenta, cyan and yellow.

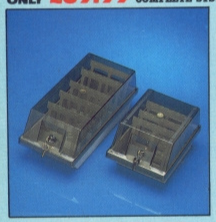
DATEL ELECTRONICS



AMIGA PRO SAMPLER STUDIO

- A top quality sound sampling system at a realistic price.
- All the usual features of a sampling system plus many more.
- 100% machine code software for realtime functions.
- Hires sample editing.
- Realtime frequency display.
- Realtime level meters.
- Files saved in IFF format.
- Adjustable manual/automatic record trig level.
- Variable sample rate and playback speed.
- Separate scroll line waveform windows plus zoom function with Edit windows for fine accurate editing.
- Hardware compatible with many other software packages.
- Software files can be used within other music utilities.
- Reverse, copy, mix, clear plus other edit facilities.
- Microphone and line input ¼" Jack and Din connections.
- 3D shot of sound waveform. Wave editor to design your own waveforms or adjust existing ones.

ONLY £69.99 COMPLETE SYSTEM, PLEASE STATE A500/1000/2000



DISK/STORAGE BOX OFFERS

- DD40 holds 40 3½" disks lockable.

ONLY £6.99

- DD80 holds 80 3½" disks lockable.

ONLY £8.99

- Disks – 3½" D/DS/D.
- Top quality, bulk packed with cables.

ONLY £24.99 FOR 25.

DATA/SWITCH BOXES

- A/B type connect two printers to one computer or (vice-versa).
- Centronics connections or RS232 (Serial) connections (25 pin) please state.

ONLY £24.99

- ABC type connect three printers to one computer (or vice versa).
- Centronics or RS232 connections.

ONLY £34.99

- Intelligent Printer Sharer.
- Share one Printer between four computers.
- Automatic switching – no need to leave your computer.
- RS232 serial or Centronics connections – please state.

ONLY £79.99

DATEL JAMMER

To complement the Sample Studio the Datel Jammer gives you a 5 octave keyboard to play and record your sampled sounds.

FEATURES:

- 2 and 3 note chords.
- 4 track sequencer up to 9999 events.
- Tempo and Beat Controls.
- Mixer Controls on Instruments.
- Load and Save sequence.
- Works on standard IFF file sounds.

MIDIMASTER

- Full Midi Interface for A500/2000/1000 (Please state model)
- Compatible with most leading Midi packages (inc. D/Music)
- Midi In – Midi Out x 3 – Midi Thru
- Fully Opto Isolated
- No need to pay more – Full Midi standard

ONLY £34.99

PRINTER CABLES

- 25 pin 'D' to 36 way Centronics parallel lead.
- A 500 or 1000 please state.
- 1.2m length.

ONLY £8.99

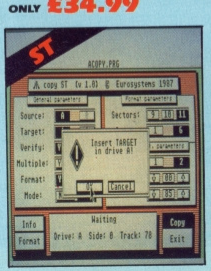
- 25 pin 'D' to 25 pin 'D' – serial printer lead.
- A500 or 1000 – please state.
- 2m length.

ONLY £8.99

ST COPY – DEEP SCAN NIBBLER

- Copy an entire disk – even highly protected programs – in under 60 seconds.
- Works with one drive or two.
- Multiple copy option allows you to make many copies from one original.
- Copy 1 or 2 disk sides – upto 85 tracks.
- Special format parameters for non standard formats.
- Using 1040 ST copy a whole disk in one pass with single drive.
- Compatible with 520 and 1040 ST
- Unique 'INFO' analyser – displays vital disk parameters, including sector distribution, data dispersion, interleave status, etc., etc.
- Full verify option.
- Easy to use Icon driven program takes the mystery out of disk backup

ONLY £29.99

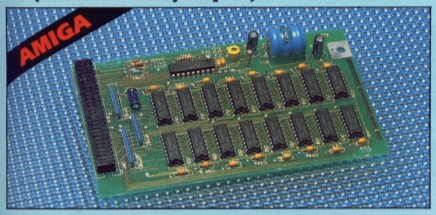


DATEL ELECTRONICS

❑ EXTERNAL 3.5" DISK DRIVE

- Slimline extra low profile unit – only 6" long!
- Top quality NEC drive mechanism.
- Throughport allows daisychaining other drives.
- A superbly styled case finished in computer colours.
- Fully compatible.
- 1 meg unformatted capacity.
- Good length cable for positioning on your desk etc.
- **Value for for money** – before you buy a drive, please compare the features – this drive has an NEC drive unit and is housed in a superb housing – many units available are built to a price and not to a standard. Don't spend a few pounds less and end up with 'rubbish' – and remember your are buying from the manufacturer.
- Complete – no more to buy
- Atari version comes complete with necessary power supply.

ONLY £114.99 POST FREE
ADD (£5 for Courier delivery if required).



❑ 512K RAM EXTENSION ● A500

- Available with/without calendar clock option
- Simply plugs internally into a A500 slot
- Fitted in minutes – no soldering etc.
- With calendar/clock onboard time/date automatically booted
- Battery backed to retain time/date

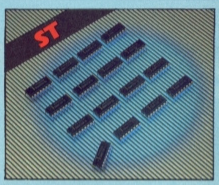
ONLY £89.99 FOR STANDARD 512K CARD OR
ONLY £99.99 FOR VERSION WITH CLOCK/CALENDAR

❑ MARAUDER II

● **Quite simply the best disk copier available for the Amiga (all models)**

- Superfast disk copier will copy almost any commercial disk
- Friendly user Interface – Mouse driven throughout.
- Completely compatible with Amiga multitasking system
- Even decrypts many encoded programs including D.Print/Video/ Paint/Music/II etc.
- Special 'Strategy Files' cope with even the most advanced protection schemes
- Supports upto 5 drives simultaneously for multiple copies
- Regular updates available – we always ship the latest
- Fast operation – typically around 80 seconds
- USA's top selling copier

ONLY £29.99 POST FREE



● 1 MEG INTERNAL DRIVE UPGRADE

- Replace internal 500K drive with a full 1 meg unit.
- Top quality NEC drive unit.
- Full fitting instructions.
- Easily fitted no special skills required.
- Direct plug in replacement.
- Available now.

ONLY £99.99

● 1 MEG RAM UPGRADE KIT

- Complete kit to fit internally into 520 STFM.
- 512K of FASTRAM to bring your 520 upto a full 1040K!!
- Fitting is a straightforward soldering job – achieved by anyone who has a little experience.
- Makes unit fully 1040 Ram compatible.
- Complete with illustrated instructions.

ONLY £79.99

● SOLDER/DESOLDER KIT

- If you wish to do you own Ram upgrade then we can supply the tools.
- Quality soldering iron plus a desolder sucker tool and solder.
- No more to buy.
- Useful for many other jobs too.

ONLY £9.99

ALL ORDERS NORMALLY DESPATCHED WITHIN 48 HRS

HOW TO ORDER . . . .

BY PHONE	BY POST	FAX
0782 744707 24 hr Credit Card Line	Send cheques/POs made payable to 'Datel Electronics'	0782 744292 UK ORDERS POST FREE – EUROPE ADD £1 OVERSEAS ADD £3

DATEL ELECTRONICS

DATEL ELECTRONICS LTD., FENTON INDUSTRIAL ESTATE, GOVAN ROAD, FENTON, STOKE-ON-TRENT, ENGLAND.

SALES ONLY	TECHNICAL ONLY
0782 744707	0782 744324

1 | 2 | 50 | 99 | 100

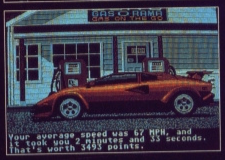
AMIGA

ATARI ST

C64 CASSETTE

C64 DISK

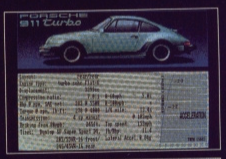
IBM

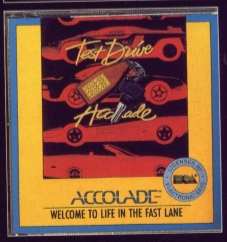


TEST DRIVE

Test Drive is different - a new standard of driving simulation game. You're probably thinking "that's what they all say". So don't listen to us. Read what Commodore User and Popular Computing Weekly said —

"never have I encountered a game where the introductory screens make me want to play the game as much as this one". C.U. "...the graphics are out of this world. For any car enthusiast the game is essential. P.C.W.





ACCOLADE™

RING: 0753 46465

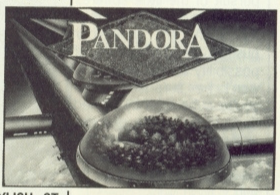
ELECTRONIC ARTS®

ACCOLADE & TEST DRIVE ARE TRADEMARKS OF ACCOLADE, INC., CUPERTINO, CA. USA. IN EUROPE, ACCOLADE PRODUCTS ARE BROUGHT TO YOU BY ELECTRONIC ARTS LTD. WE PRODUCE HOME SOFTWARE ON A WIDE RANGE OF COMPUTERS. FOR A BROCHURE AND THE LOCATION OF YOUR NEAREST STOCKIST, CONTACT: ELECTRONIC ARTS, 11-49 STATION ROAD, LANGLEY BERKS SL3 8YN, TEL: SLOUGH (0753) 46465. DEALERS PLEASE CALL (0753) 40906.

SCREENPLAY

Games, games, games... Summer it may be, but lazy it's not. Andy Storer sorts out the men from the goats and reviews the finest.

In the last month, ST Amiga Format has received 20 new games, most of which are due for release on both machines. This is a healthy state of affairs even in Summer, a traditionally slack time. However, only a quarter were originated on 16-bit machines, the remainder being ported over from 8 bits and improved to differing extents. Some were embarrassingly poor; little more than **CHEAP CLONES,** others **PURE JOY;** injected with **FRESH** speed, colour and sound. After all, if you're paying **DOUBLE** the price for a conversion why shouldn't you get **TWICE** as much **VALUE** for your money? While software houses think up an answer we'll just review those titles that show **STYLE, DEPTH** and **IMPACT.**



GAMES INDEX

FORMAT GOLD

Captain Blood Infogrames 46
Corruption Rainbird 48

REVIEWED

Sentinel Firebird 52
Pandora Firebird 53
Jinks Go! 54
Legend of the Sword Rainbird 56
Return To Genesis Firebird 57
Pinball Wizard Anco 57

Format Gold

So what makes our coveted **FORMAT GOLD** grade this month? First off is Infogrames' **CAPTAIN BLOOD,** possibly the **MOST STYLISH ST** release ever and now about to make its debut on the Amiga. The first reviews of **BLOOD** were based on a sparse French version. This has subsequently been beefed up in translation to English and promises to be enhanced even further for the Amiga.

Our other killer is **CORRUPTION**, the latest outing from Magnetic Scrolls. **INTERACTIVE FICTION** has come a long way since the first **VERB-NOUN** input **CRAWLED** through the innards of a BBC, and in **CORRUPTION** you have a State of the Art parser to guide you through the **UNDERWORLDS OF FINANCE.** That and a few filofax pages.

Preaching to the converted

Next on the list are two releases for the Amiga which really show up what a conversion **SHOULD** be about.

JINKS is no original concept – just an **IMMACULATE CONCEPTION**. Although no more than a **NEW-WAVE BREAKOUT CLONE** it has a **MASS of CLASS** just waiting to fill your screen. In a **FUTURE OF INFINITE MEMORY** it's the sort of game that'll be available as a desktop accessory – any excuse for a break and you'll be in there. It also wins our vote for **BEST JAZZ-FUNK INTRO OF ALL TIME.**

The Amiga's other rave release is **SENTINEL;** another beaut from Telecom – how much money DO these guys have?. That's the fifth title we've received from them in a month!. There wasn't ever a bad review of the 8-bit versions of **SENTINEL;** so there's no wonder this version is just as compelling and more. What you might call an **ABSORBING** game.

A WORD ON ADVENTURE RATINGS

Regular readers (c'mon, it's issue 2. You're all regular readers by now!) know we rate games on the categories of Still Graphics, Moving Graphics, Soundtrack, Lasting Appeal and Value. Okay, how many adventures do you know of that have moving graphics and sound? Not a lot. To be exact – none. So we've had to adopt a different rating system using other categories. And here they are :-

SCENARIO

The strength of the storyline – the atmosphere created by the game, how well the locations, characters and objects are brought to life. Will you be wandering around a wasteland or is there a whole world of wonder awaiting you?

INTERFACE

How easy and effective is communication with the game? If it's a text parser, will you be dealing with a dumbo or chatting with a chum? If the adventure is icon or menu driven, how well do these accomodate the range of inputs you may wish to enter?

INVOLVEMENT

It doesn't matter how well the storyline is described or how clever the interface is if you don't feel involved. Are you the central character or a general bystander? Or is the gameplay so mind-numbingly difficult you don't get a chance to find out?

LASTING INTEREST

Will you be musing for months or yawning for years? Is the adventure's difficulty compelling enough to want to make you complete it or will you just end up puzzled as to why you bought it?

OVERALL

The acid test. Does the game catch on or merely cash in?

Everyone ready then?

Turn the page, let the adventure begin...

REVIEW

CAPTAIN BLOOD

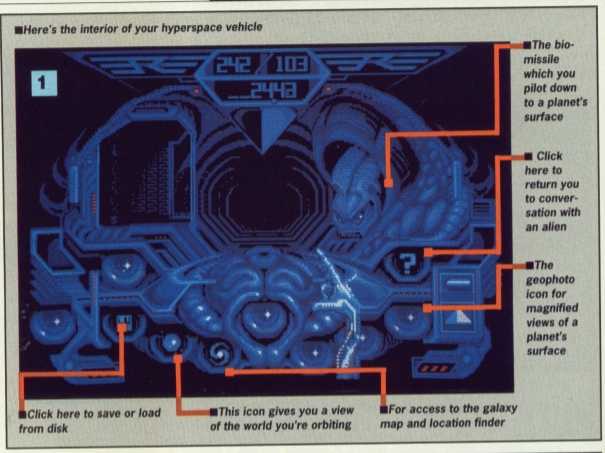
FORMAT GOLD

INFOGRAMES

ST – £24.95, Mouse, Enhanced version just out. | **Amiga – £24.95, Mouse. Due any day now**

After a reincarnated Charles Darwin tells you that Pac-Men are reproducing in millions all over the galaxy, you too might conclude something's got to be done. Whether you'd write a program to create a bio-tech hyperspace vehicle the size of an asteroid and flip over to Andromeda in pursuit of the little spheres is another question entirely. As such an endeavour pushes the boundaries of possibility to the max, you won't be surprised when you're subsequently cloned thirty times in the process and meet a species of bio-missile with more than a passing resemblance to fish.

Who *are* these guys from Infogrames?


1
The bio-missile which you pilot down to a planet's surface
Click here to return you to conversation with an alien
The geophoto icon for magnified views of a planet's surface
Click here to save or load from disk
This icon gives you a view of the world you're orbiting
For access to the galaxy map and location finder
Here's the interior of your hyperspace vehicle

GAMEPLAY

It's 800 years later and in order to maintain your vital life fluids you're tracking down your last five clones hidden across the galaxy. As there are over 32000 planets, you'll be happy to know that your task is eased by the information provided by alien life forms in exchange for satisfying their requirements – which range from destroying worlds to finding them sexual partners. Travel and trading are the underlying themes in an adventure which enables you to converse with 13 different species of alien after indulging in some of the best flying sequences ever devised.

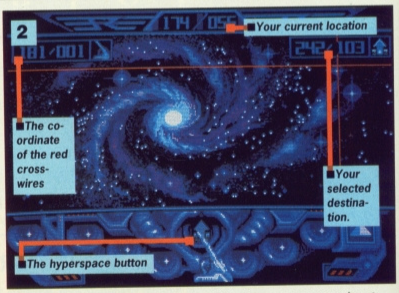
The game's structure is straightforward, all operations are mouse and icon controlled. You have a galaxy map and cross-hairs with which to pinpoint a destination, you hyperspace to the selected location and then dispatch a controllable surveillance missile to the planet's surface in order to meet the inhabitant. Using the system of icons, you communicate your wish to find your clones and negotiate a deal – which is often one-sided.

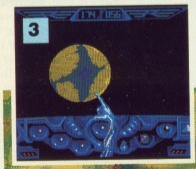
It is advisable to check each planet's surface for defence systems before going down. All worlds require low-level flight over mountains, valleys and forests. You have to locate a canyon at the end of which should be your alien.

Although there are 120 icons from which to construct questions and responses, stringing them together in an order the creatures can understand can be quite time consuming. Similarly, your hosts' pronouncements are not always crystal clear. Your approach has to differ according to the character encountered.

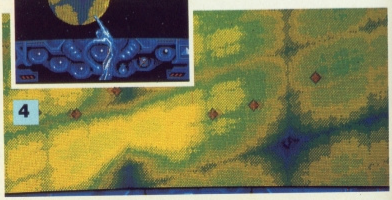
Galactic life, it seems, is pretty sparsely distributed, so it's very important to have a pen and paper handy to list all those 6 figure coordinates – otherwise you'll never remember where you've been or where you're going.

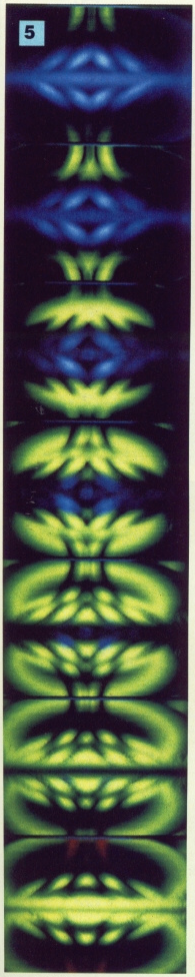
Each new game has a brand new set of inhabited planets – as you will have gathered, Captain Blood is a long, long venture.



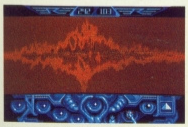


After hyperspace you arrive at your first planet.. By clicking on the geophoto icon you can scan the planet's surface for the red diamond shapes of defence radars

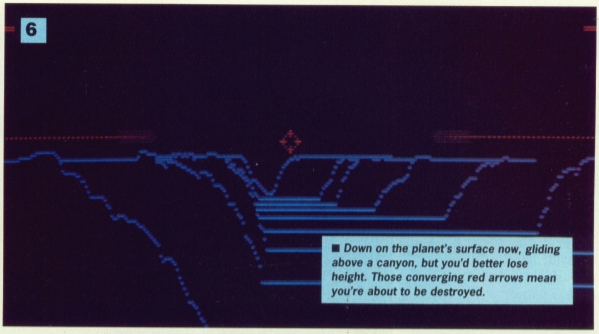




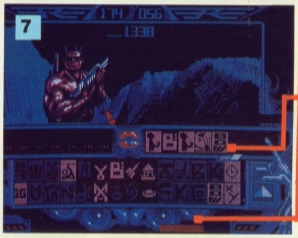
■ *You hit the hyperspace button and watch those colours shift.*



■ *Nuking an entire world might look something like this...*



■ *Down on the planet's surface now, gliding above a canyon, but you'd better lose height. Those converging red arrows mean you're about to be destroyed.*



■ *Along to the end of a canyon, the wire frame contours fill and you meet Mr. Machismo. Turns out he wants you to nail his enemy. If you comply he might tell you where one of your clones are. Maybe...*

■ *Slide this bar along with the mouse to reveal another screen of speech icons.*
■ *You move them into your speech box by clicking on the appropriate picture.*
■ *You've just said " Me Blood Me Search Planet Bow"*
■ *He doesn't look too impressed!*

GRAPHICS AND SOUND

Besides the main display of your bio-conscious vessel there are four other types of screen. First off is the static galaxy map; clicking on the hyperspace icon takes you into the second screen – a psychedelic trip through pluslight accelerations depicted as a sequence of colour worthy of Jeff Minter.

The planet then expands into full view. The design of each world seems to rely on Mandelbrot sets, though how they're generated so fast is an Infogrames secret; no two are the same and all have a rare beauty. If you wait long enough the planet will revolve full circle, but you can always get an enlarged view of the planet's surface too. Here the effects are simply stunning and it's worth buying the program for them alone.

The third sequence is the descent to a planet's surface. You glide into the blue wire-frame mapping of the world below, using the mouse to increase your speed as the wind rushes by. You can suspend movement at any point and a blue-white fractal fill traces its way into the distance.

After a few practice runs, entering the twisting canyons at full throttle is no problem; negotiating them when they're full of needle pinnacles is a lot harder. If the planet is protected by radar, you've got to fly beneath it – converging red arrows signify you're too high and if they meet it's curtains.

Once you reach the end of a canyon, you come to the alien. All the life forms are neatly drawn solid animations with speech – indecipherable alienese of course! Should your planet-bound conversation have gone badly, you can deliver the ultimate snub by clicking on Destruct. You then experience a world in its final throes; the sequence is similar to hyperspace but actually looks as though it was shot on movie film. Brilliant.

Sound FX include the booming digitised speech of your vessel's bio-consciousness as you select icons, the steadily deafening drone of hyperspace leaps and of course the excellent digitised loading screen sequence supplied by Jean Michel Jarre (a whole diskful!).

CONCLUSION

The difference between this new version and the original French Captain Blood of some months ago is staggering. As if the graphics on the ST were not enough, the forthcoming Amiga version promises to take them even further. The wire-frame contours will undoubtedly benefit from the Amiga's anti-aliasing capability – all those straights and curves becoming more defined and continuous. Sound effects will also improve thanks to the Amiga's twin-voice stereo output and Monsieur Jarre has reputedly returned to the studio to further enhance his contribution. To sum up – Bloody excellent.

still graphics 0 1 2 3 4 5

moving graphics 0 1 2 3 4 5

soundtrack 0 1 2 3 4 5

lasting interest 0 1 2 3 4 5

overall 91%

REVIEW

CORRUPTION

FORMAT GOLD

MAGNETIC SCROLLS/RAINBIRD

ST – £24.95, reviewed | **Amiga – £24.95, due out any day now**

It's an immense pleasure to come across an adventure that bears no resemblance to the mass of Tolkeinesque scenarios that abound. Just how many Orcs and Hobbits are there left alive anyway?

Magnetic Scrolls' work has always been peculiarly English – witness *Guild of Thieves* and *Jinxter* – and eccentricity is possibly the last world market in which we have a real lead. But this release does more than merely confirm their leading position as adventurers *par excellence*. Corruption marks the emergence of a form of fiction just dying to embrace a mainstream audience. If you've ever dreamed of owning a BMW that just blasts the oppostion out of sight here's your chance.

INTERFACE

Since the gameplay of any interactive adventure is determined by its parser, even the best scenarios can fall foul of inadequate systems. Fortunately, good ol' Mag Scrolls know enough about interaction to make the often tedious process of look-examine-take-enact routines interesting and absorbing. This is not to say they get *everything* right – you can ask the most logical questions and still get a dumb reply.

Many current systems seem to assume you never ask questions beginning with who, what, why, when or how, so direct questioning can be harrowing. Here this is partially overcome by the provision of two key commands – 'Ask' and 'Tell' – whereby you can enquire of or inform someone of something and receive pertinent information in return. Another useful command is 'Follow' which allows you to navigate the diversity of locations without having to enter directional inputs – it's also a valuable means of gaining access to rooms which would otherwise be denied you.

In short, it's a parser which can accomodate a diverse range of inputs, and as a consequence you don't get the feeling that you're somehow caught in an inflexible system to which you must slavishly conform. The effect is very refreshing.

■ *Theresa takes it easy – should you take her for lunch or take her keys? No wonder you can never find the boss.*

■ *Looks like you should have that turbo-charger checked... your company car gets heated up over nothing.*

GAMEPLAY

Your task as the central character in this contemporary crime thriller is to seek out the evidence required to clear yourself of implication in serious fraud. After pulling off a major share deal, you have been poached by a City firm and offered a partnership, replete with a company BMW.

However, shares is not the only form of dealing in which you're embroiled. Cocaine also happens to be one of the leading commodities of the moment and guess who's going to take the fall if there's a major crash on that market? In fact it seems you were only taken on as a fall guy.

At 9 a.m. on the first day you are shown your new office. You wander around the office chased by messages from your distinctly un-feminine secretary, and if you look as though you're busy you can drop in on your boss's secretary (who's altogether more delectable), the company lawyer, the brokers and even the cleaner for vital gossip.

There are phones, ledgers and files to be found. There's even your car to go out in. The first sign that all is not what it seems is when you overhear a conversation between your boss and the company lawyer which suggests that your successful deal was rigged. Since you must listen at a door to glean this information it soon becomes apparent that the only way to proceed is by devious methods.

Before long you have worked out a way to steal a cassette from your boss's office, which reveals a subtly doctored recording of your interview. Something is definitely amiss, and it ain't just your secretary.

So, the principal objective is to extract information and manipulate other characters in an attempt to clear yourself of impending fraud charges. Once amassed, you must get your evidence to the local police station, avoiding the menaces of drug barons, corrupt police, homicidal doctors and all manner of baddies.

The locations and characterisations are expertly described, and the sense of struggle-against-all-odds is lightened by the outrageous circumstances befalling you. If you've ever seen Scorcese's *After Hours* you'll know what's in store for you. *(Smartass – Ed)*. Let's put it this way – things do a get a little out of hand.

■ *Can you stomach this incisive sequence or are you just a drip? Either way it'll have you in stitches.*

GRAPHICS AND GOODIES

There are 28 pull down pictures which illustrate various locations in the narrative. As with all Magnetic Scrolls' recent works, the graphics are photographs copied using an art package; the result is a much higher quality than a mere digitised image. Once the pictures have conveyed the atmosphere of your surroundings you can just put them away out of sight. Since they are of such high quality it's surprising they serve no other function than dressing; they don't appear to contain clues and in fact include objects which have no presence in the accompanying text descriptions.

Above the text and graphics are the pull-down menus (perforated in true Filofax-style) controlling files, text size and descriptive detail, graphics style and 'goodies' such as printed transcripts and hints. Also up top is a clock by which you can turn up on time for appointments, and wait until a specified time before doing something.

Also included in the packaging are a number of extras. There's the cassette you steal from your boss's office, complete with dialogue and music, and Filofax pages featuring diary/address book, gambler's guide and business entertainment list. There's also a cypheric help section; you type 'Hint' at the keyboard and enter strings of encoded letters. Very useful for those hair-pulling bouts of frustration.

■ *Want a ticket for the band, mate? Could this be your salvation?*

CONCLUSION

Corruption is certainly Magnetic Scrolls' best adventure to date and more than any other, Infocom aside, serves to underline the growing sophistication of interactive fiction. There's enough here to keep you puzzled for months, so it's just as well that you can save positions and have a break.

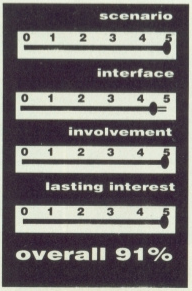
Perhaps Corruption's most endearing quality is its capacity to manage your mistakes and oversights humourously rather than take a patronising attitude. Here's a game which will give you hours of pleasure in a way no arcade release could maintain. The keyboard is indeed mightier than the laser.

■ *You duck responsibilities and search for crumbs of evidence in the local park.*

■ *Do you have enough chips for the stake? Don't lay your cards on the table until you have more up your sleeve.*

■ *After taking the BMW for a spin you decide roulette is the best bet. There's blackjack on other tables – strictly for the Over 21s, mind you.*

■ *And now here is a Police Warning. "Look out, it's the fuzz!" The Fraud Squad wonder how you manage to come back from the dead time after time.*



STAR WARS®

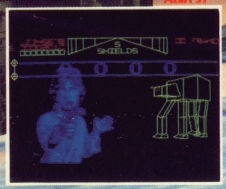
Brought to you by the team who produced the top-selling STAR WARS® game, THE EMPIRE STRIKES BACK ™ is the next stage of the unfolding drama.

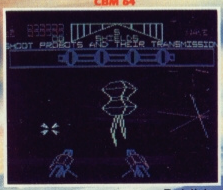
This game follows the non-stop action of the movie and is a direct conversion of the famous coin-up.

The player takes the role of Luke Skywalker, piloting a snow-speeder against the huge Imperial Walkers. Darth Vader controls his forces with deadly cunning, using his Probots to search and attack the Rebel Base.

The action continues as the player becomes Han Solo in the Millennium Falcon, looking for safety in the galaxy whilst being attacked by Tie-Fighters and dodging asteroid storms.

May the Force be with you – Always!



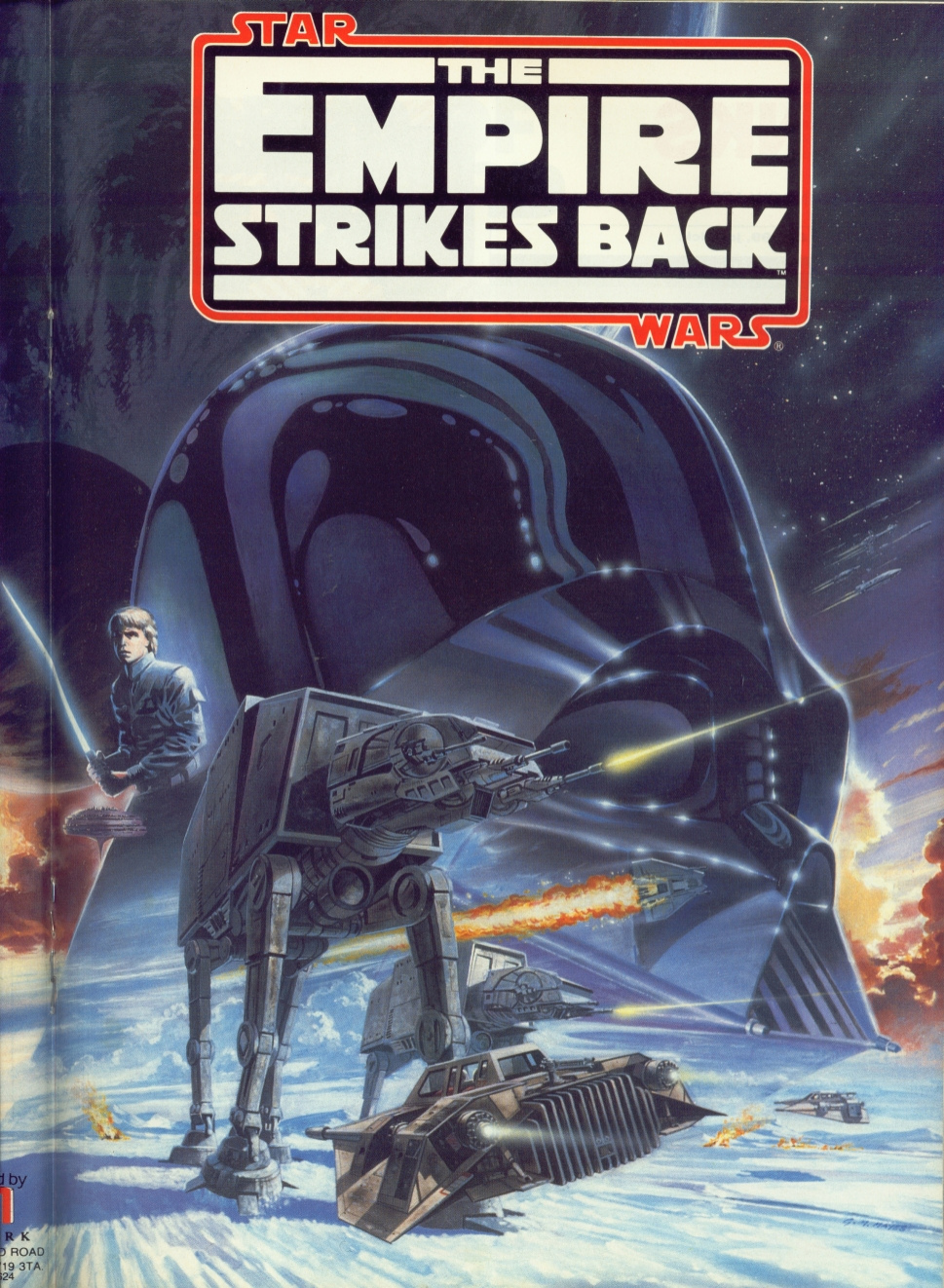


Programmed by VEKTOR GRAFIX

®,TM & © 1988, 1984 LUCASFILM LTD. & TENGEN. All Rights Reserved. DOMARK LTD. Registered User

Published by

DOMARK
22 HARTFIELD ROA
LONDON SW19 3T


STAR WARS
THE EMPIRE STRIKES BACK

REVIEW

JINKS

GO!/RAINBOW ARTS

Amiga – £24.99, joystick.

ST – No release planned

■ *Can you Jinks it among the debris left by Apollo 11 ?*

When Breakout broke out way back in '73, you probably never thought you'd be playing variations on TV ping pong for ever. Thankfully, fifteen years later, we're enjoying versions that possess only a passing resemblance to the original. Jinks has taken the concept to new levels of sophistication using the Amiga's graphics and sound capabilities imaginatively and humourously. As clones go this is up there with the likes of Arkanoid, though it's in the sound department that it rides the leading edge.

GAMEPLAY

Simplicity all too often becomes complexity in Jinks. You control a triangular bat with which you hit a ball, and (surprise!) your object is to clear the level of blocks, thereby gaining points. Each level spreads over three or four screen widths, and the Amiga scrolls with effortless ease over the whole width as you go. You've got to escape to new levels by knocking the ball into a goal mouth at the far right end of the current level.

All very straightforward but not that simple. Things begin to get a little out of hand as you come across all manner of diverse objects. These include hazards such as magnets, Atari signs (a nice bit of internecine warfare) and fish heads, which halve the size of your triangle if you touch them, making control that much more difficult. Luckily you can return the bat to normal size by pushing the ball through red cross symbols. Other objects merely serve to randomise the flow of the ball by acting as rebound devices, whilst smiling pairs of chattering teeth will bring your game to an end if they can swallow the ball. All very bizarre.

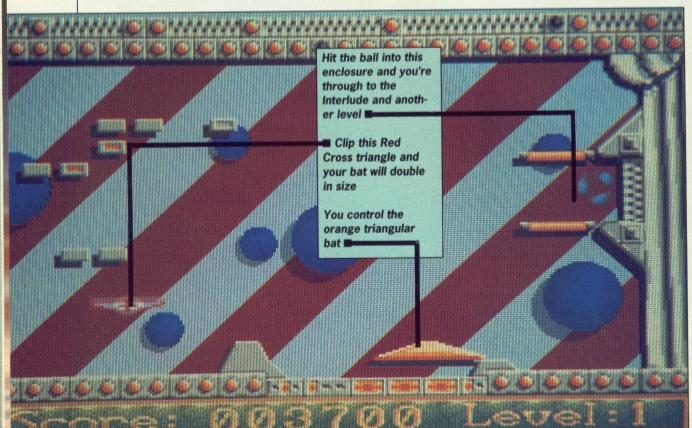
When you complete a level, a single-screen interlude appears where you must knock the ball into one of four areas in order to proceed. There are only four levels, but as you progress their level of difficulty correspondingly increases. As of course does your frustration; getting the ball to go exactly where you want it to go is very, very difficult.

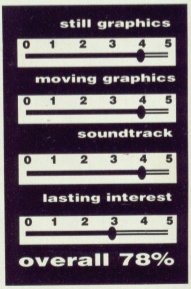
GRAPHICS AND SOUND

There is no doubt about it, Jinks looks stunning. All animated movement is extremely smooth – loose screws, paper clips, revolving earths and flying pigs spin and turn with ease against solid slow-scrolling backgrounds of moon craters and Amiga mice. The foreground action is fast; a ball-smashed screen right disappears off screen leaving you to catch it. Sometimes all you catch is a glimpse as it bounces back in the opposite direction. Fortunately you can keep track of its progress from the digitised sounds produced as it collides with squeaking teddy bears, grunting pigs, and burping mouths. But when it comes to sound, best of all is the start up screen with its cool jazz-funk sample.

CONCLUSION

Jinks is best described as a hybrid rather than a clone. It effectively combines Breakout and Pinball in a surreal mix of ingenious humour. The result is a gameplay comprising sufficient randomness to ensure you're back to that jazz-funk intro day after day. If there's any criticism it has to be the wait-states endured between level loadings but then the graphics and sound admirably compensate for this. All in all, Jinks is a game which goes to prove that the Amiga can turn lightweight concepts into heavyweight productions. A real beauty!


Hit the ball into this enclosure and you're through to the interlude and another level
Clip this Red Cross triangle and your bat will double in size
You control the orange triangular bat
Score: 003700 Level: 1



■ *Waiting in the goal mouth zone for the long lost ball to reappear. Watch it doesn't hit those orange blocks beneath you or it'll disappear through them and leave you back at square one again.*

LEGEND OF THE SWORD

RAINBIRD

ST – £24.95 | **Amiga – £24.95**

The evil wizard Suzar has launched an attack on the land of Anar with his hideous humanoid army' – so runs the storyline to Rainbird's latest graphics adventure. It continues 'The valiant forces of Anar did their best to hold off the armies of Suzar, but they stood no chance. Every time a man of Anar was slain he was brought back to life by Suzar and attacked his former comrades. You were one of the lucky ones that managed to escape the carnage and flee Anar.

You are summoned to the High Council of Anar where you learn from King Darius of a legendary sword and shield that were once guarded by the Corsarians. Both of these artifacts must be found if Suzar is to be slain. Speed and secrecy are of the utmost importance, so you and five other brave individuals set sail for Anar to find the sword and shield'.

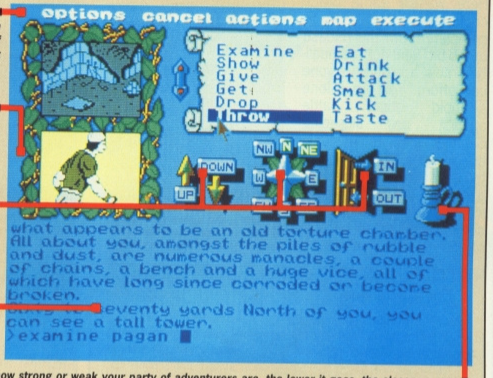
■ *Across the top of the screen are menu items which can be clicked to reveal the more common commands*

The location window shows a small picture of your current whereabouts.

This window updates your current actions and moments of combat.

Movement icons can be used for rapid movement from one location to another.

Text input and output appears at the bottom of the screen.



The candle shows how strong or weak your party of adventurers are, the lower it goes, the closer you are to death.

GRAPHICS

Most adventure graphics are static but Legend of the Sword has something different, a scrolling map that gets gradually filled in as you explore the land. Normally it's only a small section of the screen, but you can expand it to full screen if you want to get your bearings. The small location and action pictures are not very detailed due to their size, but you can clearly see what everything is supposed to be. The overall screen presentation is very good and if you don't like the background colours they can be changed to suit your taste. As with nearly every adventure the only sound you get is from the keyboard.

INTERFACE

Although this is basically an adventure, it has an unusual method of command entry. Many of the common commands can be summoned with a mouse click. The eight compass directions, up, down, in and out can be clicked directly and many other commands can be accessed through menus. Your current location and last action are displayed graphically in two windows on the screen. A third window shows the menus or map depending on what you're doing at the time.

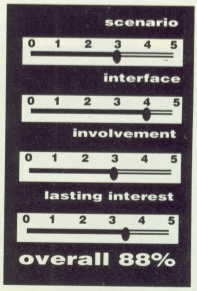
You can't use the mouse exclusively in solving the adventure, but you can zoom around and interact with many of the objects using it. When you come to type in commands from the keyboard, you'll find the interpreter flexible and quite sophisticated, although you can still use verb/noun commands if you want to. 'Find' and 'goto' are two of the more advanced commands that allow you to move straight to a particular location or object. The oops option is included to help you rectify unfortunate (and usually painful) mistakes by taking back your last command.

■ *Clicking on the map window switches to a full-screen map of the area that you're in.*

CONCLUSION

Evil wizards have been persecuted by brave warriors every since the dawn of computer adventures and Legend of the Sword is not about to buck the trend. The thing that does set it apart from the rest of the pack, though, is the presentation. The on-screen map, the use of mouse and menus for the more mundane actions is good and speeds play. Unfortunately some of that speed is lost with the regular disk accessing.

Gary Barrett



REVIEW

THE SENTINEL

FIREBIRD

Amiga – £19.95 keys,mouse | **ST – £19.95 keys,mouse**

Even in its 8-bit incarnation, Geoff Crammond's avant-garde strategy game was a rare example of strategic gameplay on a par with chess. Here was a game which could take literally years to complete. With the release of 16-bit Sentinel, originality is now a rarity everyone can afford. You are a lone synthoid doing battle against an all-seeing Sentinel and its minions, the Sentries. Pure energy is the medium of progress in a series of tactical decisions where you must gain sufficient height to be able to absorb your enemies.

■ *Hitting the space bar in different locations gives you some very impressive external shots*

■ *A sentry covers a possible route to higher ground.*

■ *There you are in the foreground with quite a bit of climbing to do*

■ *The sentinel turns your way*

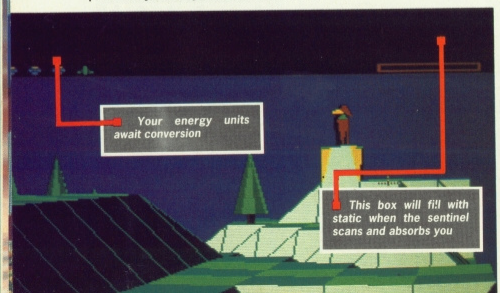
GAMEPLAY

You can only absorb an object's energy if you can see the square on which it stands and as such the trick is to gain height and thus a greater vantage point. You eventually work your way up and around the landscape until you are in a position to absorb the Sentinel itself and proceed to another world.

This would all be a lot easier if the Sentinel and Sentries were passive, which of course they're not. Once you start absorbing energy, they start turning and once facing in your direction will begin to absorb you. As you can't always see them, you can only tell when your precious energy starts to disappear by watching the small box in the top right corner of the screen. When this begins to fill with static you know you had better move quick or you'll end up as sub-atomic debris. One way of avoiding the Sentinel's scan is to hide behind parts of the landscape or trees; if it can't see you it will just keep turning. If it can see you but can't see the square on which you're placed the Sentinel creates a Meanie, a Sentry that tries to force you into hyperspace.

Once you have gained enough height to see the square on which the Sentinel is standing you can absorb it and claim its energy, so allowing access to a new world and a fresh challenge.

■ *Your synthoid eyes view the Sentinel's killer stare*



GRAPHICS AND SOUND

Each landscape is a contoured series of solid plateaux, ledges and dips. From above, the beauty of each design is more apparent; the seemingly random configurations provide one of the great sights of contemporary games software. Energy transfers are conveyed by a smooth break up of the object. The only real criticism is that the cursor speed is only marginally faster than on the earlier 8-bit versions despite being reworked by Steve Bak.

The immediate surroundings scroll slowly – almost too slowly – but a greater scrolling speed would make the game too easy unless the number of Sentinels and Sentries per level were increased. As such, the result is a trade off.

The Amiga version scores over the ST with the addition of David Whittaker's stereo sound effects and musical accompaniments to your activities. These work well in enhancing the alien atmosphere of the game and add to the tension when you're under the Sentinel's terminal gaze.

CONCLUSION

We're talking as near to the infinite as you'll probably care to consider – by the time you've completed its 10,000 levels of tactical planning one thing's for sure – you'll know the meaning of the word Absorbing. Because your rate of success determines the number of your next world, the pathways to increasing difficulty are many and varied. If you can complete level 36 please write and tell us how! We've heard that landscape 6734 is a bit of a bind too. Like chess, you could be playing this game for ever. It's an instant classic.

still graphics 0 1 2 3 4 5

moving graphics 0 1 2 3 4 5

soundtrack 0 1 2 3 4 5

lasting interest 0 1 2 3 4 5

overall 82%

SUPER ACTION FOR YOUR ATARI ST

ARMY MOVES
the name of the game
DINAMIC
PLATOON
The first casualty of war is innocence.
WITH THIS SPECIAL OFFER ORIGINAL SOUNDTRACK RECORDING
©1986 Orion Pictures Corporation. All Rights Reserved.
ocean
A computer product from Ocean.

ONLY £19·95 EACH

ocean

ONLY £19·95 EACH

Ocean House · 6 Central Street · Manchester · M2 5NS · Tel: 061-832 6633 · Telex: 669977

REVIEW

PANDORA

FIREBIRD

ST – £19.95 joystick

Amiga – £19.95 joystick

Or, once you've opened the box, dare you open ***the*** box? Pandora is a seventh generation computer guiding a spaceship of the same name in a search for alien life. Pandora evidently found it, since it's now out of control. You're an obliging Intergalactic Salvage Operator who's contracted to investigate and disable it – funny how the best job opportunities fall your way eh? But it's not just a question of delivering dead junk back to Earth, for this ship is alive and fully intends to return to Earth on its own accord. The fact that it may come and greet us at terminal velocity hasn't entered into its head. So you don't have a lot of choice really. You have to disable her or die in the process.

GAMEPLAY

You guide your character around the ship's interior in a search for the access codes and keys to shut down the drives. Your route to this goal requires a certain amount of 'trading' with other characters on board. Although most of the useful personnel are dead, the place is crawling with weirdos of all kinds – mutant punks, combat droids, automatic cleaning drones, the alien from Dark Star and various other driftwood from popular sci-fi. The choice is whether to enter into a punch up with these lost souls or trade objects. The more fights you get into, the lower your health status; once you become Dire you may as well give up.

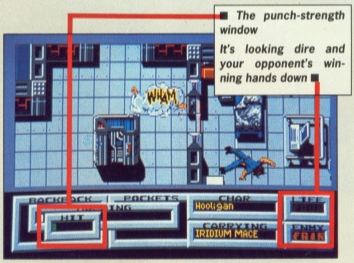
Getting the hang of this usually involves beating up a roaming hooligan several times for practice until you can collect weapons and take on some of the more heavily defended characters on board. You find weapons and most other objects scattered around the ship in empty quarters and work stations – some protected by force-fields and security locks.

As with many other arcade adventures, it can take quite a while to work out which are the best objects to hang on to. If a character wishes to trade he usually tells you so – displayed by scrolling text across a message window – otherwise you take what you want by beating the guy to death. No wonder Pandora went haywire.

GRAPHICS AND SOUND

Pandora's graphics transform average gameplay into an enjoyable visual treat. Movement of the many characters is smooth and solid while the colourful backgrounds are in no way repetitive. ST users are given the option to adjust the distance that the screen scrolls when the character moves towards the screen boundary. The default setting is usually more than adequate, but if you want to see what's coming up around that corner, press [+] to display a wider screen transition.

Fights are depicted as clouds of arms and fists punctuated with Batman-like Kapows and Crunches. This would be great fun to watch save for the fact that you have to keep your eyes firmly planted on a 'punch-strength' box and hit fire when the strength of your assault can be seen to be at maximum. Sound is confined to spot effects only, mainly in the fight sequences.



■ *The punch-strength window*

It's looking dire and your opponent's winning hands down ■

■ *The science officer takes a rest while you punch up a punk*

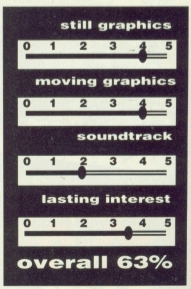
Various IDs giving access to terminals and restricted areas ■

The inventory window opens after hitting space ■

■ *You dodge the cleaning drone and pause to take stock*

CONCLUSION

Thankfully, completing the game requires more than violence. You have to locate and interrogate computer terminals after first securing the correct access codes, and map out the route to the heart of the ship in order to shut down the drives before it hits Earthspace. In the meantime you can increase your score by finding and dumping alien artifacts down a shuttle chute. But there are times when you'll feel like taking that chute yourself since there's no means of saving your current position. An unfortunate oversight in an otherwise extremely playable game.



RETURN TO GENESIS

FIREBIRD

ST – £19.95 Keys, Mouse, Joystick

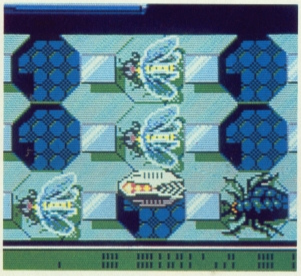
Amiga – £19.95 Mouse, Joystick

From the author of Goldrunner and Karate Kid II we bring you... a terminal visual assault!. Genesis is to Defender what Jinks is to Breakout; namely a sophisticated horizontal scroller that shifts like there's no tomorrow. The game has moved firmly away from wire frame animations and is blessed with solid fills. What's more, 16 bit power is moving those fills at the kind of speeds you'll one day end up buying yourself a pair of Porsche eyeballs to follow. In the meantime, have a bottle of Optrex handy.

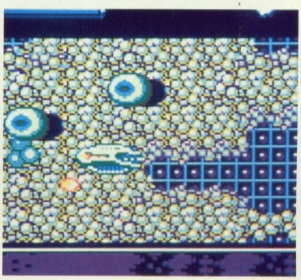
It's 6600 A.D. and 12 scientists await transportation along with fifty of their clones in the ten worlds of the Zephyr region. The aim is to fly a high speed assault craft over, under and through richly textured landscapes populated with legions of hostile aliens. You must collect as many scientists as possible before moving on to the next world, and all along the way you have to enter into delicate negotiations with alien pursuit vehicles, i.e. blast them beyond recognition before they do the same to you.

Scientists are collected by running right through them – a method of contact they don't seem to mind since they're still prepared to provide you with additional resources once they're on board. Between levels you may choose from the group you have rescued to acquire the technology to activate extra lasers, collision free movement, and higher speeds.

Colour has been used to great effect to enhance the speed and difficulty of the action; the backgrounds are beautifully designed, comprising a rich variety of motifs – butterflies, beetles, brains and, perhaps most appropriately, eyeballs, among the finer examples. Sound is pretty good too – there's some neat sampled voices and a great background track by David Whittaker.



■ *That's your ship moving left to right among the crawlies of the final level*



■ *The scientist longingly waits for you to plough straight through him*

still graphics 5.0
moving graphics 5.0
soundtrack 4.0
lasting interest 1.5

overall 74%

PINBALL WIZARD

ANCO

Atari ST – No version planned

Amiga – £ 19.95 keys

Think of a popular game that can't be simulated. Thought of one?. Thought not. Here's the latest and a brave effort it is too. *Pinball Wizard* is a simulation of an arcade pinball right down to the manic digitised laughter and all those other whacko sound effects.

You can select up to four players, alter play speed, score bonuses, win new balls *(A Wimbledon reference, no doubt – Ed)* and everything else you'd expect on the real thing. But how do you emulate flippers and what about tilt?. Easy!. The [Alt] keys on either side of the space bar act as flipper buttons, while the space bar acts as a tilt function; speeding up the vertical movement of the ball. Hit that bar more than twice in a row and it's a pair of dead flippers.

Whilst all the mechanics are there, what about the feel of the thing? – that old wrist action?. We found the flip combinations worked fine but that the tips of the flippers were less responsive than you'd expect. All the angles are covered, though, even Gravity works out to a fine degree. If there were half a dozen screens sharing that same coding, Pinball Wizard would be a game you'd come back to again and again. As it is, you won't. Well, not after you've seen whether the score clocks over at 20 million!

■ *Hit the right [Alt] key to fire the ball*
■ *Flip the ball up here for bonus points or an extra ball*
■ *Spell the name and take the bonus*

still graphics 4.0
moving graphics 4.0
soundtrack 4.0
lasting interest 3.5

overall 70%

FIRE AND FORGET

DREAM-UP 45.84.29.79

THE FUTURE IS IN YOUR HANDS! FIRE AND FORGET! NEVER LOOK BACK
YOU ARE OUR ONLY CHANCE...

TOP SECRET
COMING SOON FOR SPECTRUM 48/128, C 64/128 AND AMSTRAD CPC

AMIGA VERSION

PS, PC, XT, AT VERSION

ATARI ST VERSION

TITUS™

UNIT 4 STANNETS LAINDON NORTH TRADE CENTRE BASILDON ESSEX SS15 6DJ PHONE: (0268) 541126

©1988 TITUS SOFTWARE CORP., TITUS AND THE TITUS LOGO ARE REGISTERED TRADE MARKS OF TITUS SOFTWARE CORP. COMMODORE 64/128, IBM, ATARI ST AND AMIGA ARE REGISTERED TRADEMARKS OF COMMODORE ELECTRONICS LTD, INTERNATIONAL BUSINESS MACHINES, ATARI INC AND COMMODORE AMIGA RESPECTIVELY

DREAM-UP 45 84 29 79

INTRODUCING A NEW DIMENSION IN MANAGEMENT DATABASE SYSTEMS

NOW EXTEND YOUR REACH

Superbase Professional is one of the most advanced databases ever produced for the Atari ST™. It represents a technical and commercial breakthrough which will allow you to advance your expectations of a database beyond that of any existing system. Superbase Professional was conceived as a 'no limits' database; your only limitation is the capacity of your machine. Whatever the application, Superbase Professional has the power to achieve it.

The Graphics Applications Generator

With the Superbase Professional Forms Editor you can create custom applications relating multiple files. It is a unique graphic design tool used to create forms using patterns, lines, boxes, text fonts, graphic images and fields from any file – in colour. Superbase Forms possess the intelligence to generate linked records, then retrieve and display them automatically without any programming. It is the ideal developers tool.

Total text integration

An integral text editor allows a mail merge interface to the database and the ability to link text files to records. The Superbase text editor allows you complete freedom to use any amount of text within your database files or can be used simply for your day to day correspondence and typing requirements. Superbase Professional can search any ASCII text file even if it wasn't created by Superbase.

Database Management Language

Superbase Professional's unique Database Management Language gives you access to all the power of your computer. Should you need to, this fourth generation programming language allows you to write entire applications in just a few lines of program code.

As easy to use as a VCR . . .

With Superbase Professional you have data retrieval at the press of a button.

The video style controls mean that you can use and preview your data with the minimum of effort.

. . . with unlimited processing potential

All the field types of a powerful modern database including date and time arithmetic, cross file lookup, calculation and validation allow you to exploit your data to the full.

Unrivalled ease of use with unsurpassed power: a combination not achieved until now.

Professional back-up

Superbase Professional has the full backing of Precision Software's technical team. 20 hours FREE telephone hotline during normal working hours for the 90 days following registration, and Extended Support Schemes to suit all users for purchase after that time.

Price: £249.95 (inc VAT)

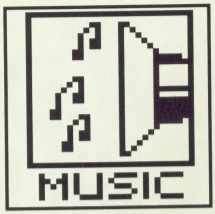
Registered users of Superbase Personal write for upgrade price and procedure.

Superbase™ PROFESSIONAL

Precision Software acknowledge all trademarks

Precision Software

For further details contact
Precision Software Limited, 6 Park Terrace, Worcester Park, Surrey KT4 7JZ.
Tel (01) 330 7166, Fax (01) 330 2089, Telex 8955021 PRECIS G.



THE MIDI SYSTEM

Electronic music would not be where it is today if it were not for a unique industry wide interface standard, MIDI. Chris Jenkins sounds out its development and the difference it makes.

MOOG MUSIC

Dr Robert Moog is credited with building the first commercial digital synthesizer and such records as *Switched on Bach* and most of Emerson, Lake and Palmer's early output testify to the fact that it was eagerly taken up by a variety of musicians. To some extent the sounds of electronic music have turned full circle with the current trend to digitise natural sounds into an electronically playable form.

Computer music has changed a lot since the early days, when American institutes used gigantic machines to produce weird bleeps and burbles. Now anyone can make recognisable music *(I can't – Ed)*, either with home computers alone, or with inexpensive musical instruments linked together with MIDI.

The ST and Amiga are particularly suitable for music making, but for different reasons. While the Amiga features the powerful custom sound chip Paula, the ST's sound chip is the standard Texas Instruments device found in everything from the TI-99 to the Sinclair Spectrum 128; it's nowhere near as versatile as the Amiga's. In contrast, the ST is the first (and so far the only) micro to be fitted with a MIDI interface, while the Amiga can only be fitted with MIDI at extra expense.

Overture

You can get started in computer music simply by learning to control the computer's sound chip from BASIC. For most people, though, it's more sensible to invest in an inexpensive software package to discover whether you actually have any musical ability. Remember, the computer can produce the sounds, but it's usually up to you to come up with the tune.

An excellent example package, available on both machines, is *Music Construction Set* from Electronic Arts. Priced around £50, it allows you to experiment with the creation and arrangement of sounds, without requiring you to use external equipment. MCS is fully mouse-driven. The main display screen shows a series of pull-down menus, a music stave (the conventional ruled lines for music composition), a keyboard diagram, a set of utility icons, and a number of note value icons. To compose music, you simply click on the keys you require on the keyboard diagram, or pick notes from the menu and place them on the stave.

Sections of the music can be edited, copied and deleted and you can assign preset instrument sounds to each of the four available voices. On the ST, these are created by the internal sound chip; on the Amiga, they are sampled from real instruments. In both cases, you can define new sounds using the Waveform Editor screen. Most Amiga music packages and samplers allow you to assign sounds to either of the two stereo outputs (another respect in which the Amiga scores over the ST).

MCS even has primitive MIDI facilities, so you can input note information from a MIDI keyboard, or output tunes to the synth. *Aegis Sonix*, a slightly more sophisticated package for the Amiga, allows eight monophonic composition tracks, though still only four of these can be sounded by the Amiga (the others have to be played on external MIDI equipment). *Sonix* also lets you create your own sounds by drawing the basic waveforms, use sampled sounds, in standard IFF file format, or play voices from a MIDI keyboard (though you can't record the performance).

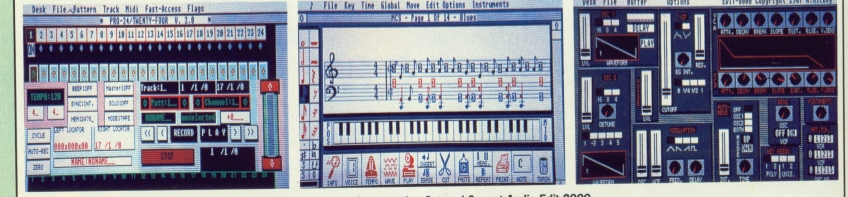
Crescendo

You'll notice that in discussing even the simplest music packages, two buzzwords of modern music-making have started to crop up: MIDI and sampling. Both have made an enormous impact on the professional music scene, and both are available to the home computer user, either in

MIDI INS, MIDI OUTS

MIDI is basically a serial communications protocol similar to RS-232. It transfers data from one MIDI device to another in digital 'packets'. Connections are made through five-pin DIN sockets and on most MIDI devices you'll find a MIDI OUT, which transmits signals, MIDI IN, which receives them, and sometimes a MIDI THRU, which passes signals through the instrument to other devices. In the ST, MIDI THRU is hidden on two spare pins of the MIDI OUT socket; not a very convenient arrangement, since it requires the use of non-standard MIDI cables for all but the simplest MIDI set-ups.

MIDI operates on sixteen discrete, numbered 'channels'. Most MIDI instruments can be set to respond to information on these channels in three different modes: OMNI, where the instrument responds to any channel; POLY, where it responds to only one; and MONO, where (on some instruments) you can play several different sounds simultaneously, each responding to a different MIDI channel.



■ *Three Midi sound packages: Steinberg Pro 24, EA's Music Construction Set and Savant Audio Edit 8000*

budget form or in expensive high-quality systems.

In what are laughably referred to as 'the good old days', manufacturers such as Moog, Roland and Oberheim produced large, expensive, complex modular synthesizers. Parameters such as pitch, timbre and waveform of the sounds were chosen by plugging leads into patch boards, and single-note music was played by applying voltages from a keyboard to the sound oscillators. The biggest problem was that instruments from rival manufacturers weren't electronically compatible. You couldn't connect the keyboard from one to the sound-generators of another, or link two different sets of oscillators to produce thicker sounds.

As synthesizers became more powerful, several sound oscillators were combined in one unit to produce 'polyphonic' synths that could play chords. The first big success was the Sequential Circuits Prophet-5, which had five 'voices', a digitally-scanned keyboard voice assign system, and microprocessor memories for sound patches. Other manufacturers followed suit, but still different instruments could not be reliably connected together. In the late Seventies, Sequential Circuits proposed the Musical Instrument Digital Interface (MIDI), and the standard was rapidly adopted by all the major instrument manufacturers.

Legato

MIDI can be used to exchange all kinds of information. The most common is NOTE ON/OFF. This simply tells the synthesizer to play and then stop a note of a particular pitch. The range handled by MIDI is notes 0-127 (C0 to C8).

The second most important form of MIDI information is 'performance data'. This includes parameters like volume (sometimes called 'key velocity'), aftertouch (pressure on the synthesizer keys), pitch bend, vibrato, tremolo, wah-wah and other effects which add expression to the musical performance. MIDI Clock signals allow you to start, stop, and set the playing speed of devices such as drum machines and sequencers. Lastly, you can also use MIDI to transfer sound patch data. Most modern synthesizers can create thousands of different sounds, defined by combining dozens of parameters and values. The blocks of data representing these sounds can be squirted via MIDI to other synths, or computers, allowing sounds to be edited, organised and exchanged quickly and easily. To some extent, the same applies to digital sound samples, which again are basically just streams of numbers held in memory.

Because all this information – note values, performance data, sound patches and samples – is basically digital, computers are perfectly happy to do all the hard work of handling them while you concentrate on composing great music.

Espressivo

The most important software package you can choose is the Sequencer. The original sequencers were analogue devices, using potentiometers to define a simple pattern of notes for voltage-controlled synthesizers. Modern software sequencers are much more advanced and are best thought of as the musical equivalent of word processors; they allow you to record, store, edit and replay musical performances by manipulating MIDI data. Like a word processor, a MIDI sequencer lets you erase mistakes, copy and move blocks of data, and generally polish your production until it's perfect. In fact, a sequencer lets you produce music which you could never play yourself, because it's too complex or skilful.

Because the Atari ST has MIDI ports built in, it has an enormous advantage over the Amiga. Musicians were quick to recognise this, and a number of professional-standard sequencer packages such as

DIY SOUND STUDIO

You can set up a professional-sounding MIDI music system for only a few hundred pounds. There are four main types of equipment you may need: synthesizers, drum machines, recording gear and effects units.

Synthesizers come in two forms: as keyboards, or as keyboardless 'MIDI modules'. While you can play a module from a computer, you'll certainly need a keyboard of some kind, even if it's a 'dumb' controller keyboard which makes no sound itself, but transmits MIDI signals to the modules.

Inexpensive MIDI synthesizers include the programmable Casio CZ-101 and preset CZ-230S, the Yamaha DX100, and the Roland Alpha Juno 1. Modules include the Yamaha TX81Z, Roland MT32 and the Cheetah MS6. Most of these synths will cost between £200 and £300.

Drum machines use sampled percussion sounds, which you can arrange into complex patterns and chain into songs. You can synchronise your drum machine with your sequencer using MIDI clock signals. Most MIDI drum machines allow you to play the drum sounds from a MIDI keyboard, and on some you can insert new sounds, either on chips, data cards, or, in the case of the Cheetah MD8, from data cassettes. Other popular models include the Roland TR626 and Yamaha RX21. Price range is again around £250.

You can pay twenty times that much for decent recording equipment, but the best idea is to start off by spending £3-400 on a 'portastudio'. These combined mixer/recorders let you layer four recordings on a standard cassette. By copying and recopying between tracks, you can then create complex-sounding music with fair recording quality. The advantage of having a good selection of MIDI instruments is that you can do more in each 'take', retaining the original signal quality. Good portastudios are made by Tascam, Vesta and Fostex.

To sweeten your recordings, you might like to invest in an inexpensive effects unit. A decent digital delay or reverberation unit can improve your sounds tremendously, and some, such as the Alesis MidiVerb, allow you to use MIDI control signals to switch from one preset effect to another. Akai and Roland also manufacture good effects units starting at around £150.

DIGITAL APPROX

The process of digital sampling is something like the difference between a smoothly curved graph and a bar chart of the same information. Using this analogy, a digitiser checks the height of the curve at various points along its length and draws a column at that point of equal height. The more samples that are taken (the higher the 'sampling rate'), the narrower each column is and the closer the bar chart approximates to the curve.

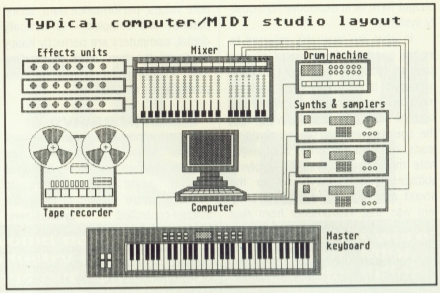
MIDI, MIDI AND MIDI

The Musical Instrument Digital Interface (MIDI) has nothing to do with Midi hi-fi systems, which are somewhere between normal size and very small, nor anything to do with the calf length skirts fashionable during the early 70s.

Steinberg Pro-24, Sonus Masterpiece, System Exclusive Iconix and *C-Lab Creator* are now common in the largest recording studios. Do you realise that all the tunes you hear produced by Stock, Aitken and Waterman, including hits by Rick Astley, Kylie Minogue and Sinitta, are played almost entirely using *Steinberg Pro-24* on the ST?

Packages of this complexity, featuring dozens of tracks, powerful MIDI data editing features and extras such as synchronisation with video and film, normally cost over £250. However, simple sequencers such as *Microdeal Super Conductor* and *Hybrid Arts Easy-Score* allow you to get going for around £50. The situation isn't so straightforward for the Amiga. There are several MIDI interfaces available at around £50, including the *Midimaster* from Datel, *Skyles* from Supersoft and the Eidersoft interface. If you want to use more than one MIDI instrument, it's useful to get an interface with more than one MIDI OUT; the *Midimaster*, for instance, has three.

Unfortunately, music software available for the Amiga in the UK is largely of the 'home entertainment' type discussed earlier, because the ST took off much quicker among musicians in the States. But the situation for the Amiga is improving slowly. Products such as New Wave Software's *Dynamic Studio* sequencer, and *Music X* from Micro Illusions, are well up to the standards of the ST's *Pro-24* and *Creator*, yet no-one seems keen to import them into the UK. Come on Amiga dealers – get your musical act together!



Variations

Patch editors are also becoming more easily available for both machines. The original synthesizers bristled with knobs, sliders and switchers used to program new sounds. To cut costs, most modern synths use "digital access"; a keypad selects the sound parameter you want to change, and a single slider or wheel changes the value, which is then stored in memory. This is a slow and unwieldy method of changing sounds. Using MIDI, though, you can transmit all the synth's sound data into your ST or Amiga, and use the visual interface to edit sounds quickly, then store them on disk. This works out both quicker and cheaper than buying RAM cartridges or cards full of new sounds, at £50-£60 a shot.

Most of the popular synths, such as the Yamaha DX series, Roland Alpha Juno 1/2, D50 and MT32, Ensoniq ESQ and SQ80, and Korg DW8000 and Poly 800, have suitable editing packages designed for them. Big names include *Dr T, C-Lab, Hybrid Arts* and *Steinberg*. Some packages, such as Hybrid Arts *GenPatch*, allow you to store sounds from any synth (though you can't edit them). You can even store sounds from professional samplers such as the Akai S900, Emax and Mirage. The advantage here is not a saving in storage costs (all samplers use cheap disks instead of cartridges), but the extra editing facilities possible using the micros' 68000 processors. For instance, *Synthworks* on the ST offers you the possibilities of 'harmonic synthesis', where you can define the waveshape and amplitude envelope of thirty harmonics, to create pseudo-real sounds which can be played back through your sampler. Most of these editing and synthesis packages are available on the ST now, and are slowly making their way over to the Amiga.

Allegro, con brio

Possibly the quickest and most enjoyable way to get into micro music is by buying a sound sampler. There are several available for both machines at around the £60 mark, and though they vary widely in the fine details of hardware and user interface, they all do very much the same job.

Eidersoft's *ProSound* sampler is a good example. The hardware consists of an eight-bit analog-to-digital convertor board, which takes sounds from a microphone or line input and digitises them. 'Eight-bit' refers to the format in which the data is stored; you'll also see references to the 'sampling rate', which is the number of times per second that the computer samples the incoming frequencies. Obviously, in both cases, the higher the number, the better the resulting sound quality. Bear in mind that eight-bit sampling will never give you real professional quality; twelve- or sixteen-bit samplers are now standard equipment for professional musicians.

ProSound, and other sampling packages such as the Datel *Pro Sampler* for the Amiga, allow you to edit the start or end of a sample, introduce a loop to create a sustained sound, reverse, copy and mix samples, and play the results from the QWERTY keyboard. The better samplers allow you to compose fairly substantial tunes, while some (including Eidersoft's) feature optional MIDI control. Look out too for more powerful but more expensive packages such as *Future Sound* and *Perfect Sound* for the Amiga, or the incredible £1000-plus Hybrid Arts *ADAP* for the ST, a sixteen-bit system using hard disk storage for up to 42 minutes of compact-disk quality sampling!

Da capo

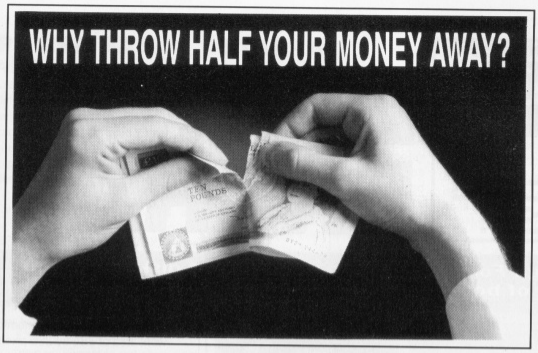
Music is probably the fastest-growing area of computer use, and you can be sure that increasingly sophisticated and affordable packages will be appearing for both the ST and Amiga. Don't worry about the technicalities – the important thing is to jump in and have a go at making music with your micro.

A REPRESENTATIVE SAMPLE

Sampling can be thought of simply as 'digital sound recording'. The computer's memory replaces magnetic tape and stores the sound as a series of numbers. This data can be manipulated before converting it back into sound, thus creating effects such as pitch changes, in the same way as speeding up or slowing down a tape. Editing, looping, splicing and combining real sounds can create fantastic effects, whether you're using a £50 sampler on the ST or Amiga, or an £80,000 Fairlight Series III.

CONTACTS

Datel	**Units 8/9, Dewsbury Road, Fenton Industrial Estate, Fenton, Stoke-on-Trent, 0782-273815**
Eidersoft	**Unit 4, Stannets Laindon, North Trade Centre, Basildon, Essex, 0372 67782**
Electronic Arts	**Langley Business Centre, 11-49 Station Road, Langley, Slough, Berks, 0753 49442**
Hybrid Arts	**c/o Syndromic Music (ST music specialists), 24-6 Avenue Mews, Muswell Hill, London, 01-444 9126**
Microdeal	**41 Truro Road, St Austell, Cornwall, 0726 68020**
Steinberg	**c/o Sound Technology, 6 Letchworth Business Centre, Avenue 1, Letchworth, Herts, 0462 480000**



HALF PRICE GAMES?

If you take your games seriously, you want the best games at the best prices. Now you can get what you want by joining a club. There's **SPECIAL RESERVE**, our buyer's club, and **OFFICIAL SECRETS**, a club for people who play adventure, strategy and the very best arcade games seriously.

SAVING MONEY
The Special Reserve Way

Special Reserve selects the best, the latest, the most advanced computer games and 'gives' them to members, normally **AT HALF PRICE** – or even less. We do have to charge you for post and packing, but even so, as a member of Special Reserve you'll find our prices very hard to beat.

FREE GAMES!

When you join **OFFICIAL SECRETS**, you get free membership of SPECIAL RESERVE and a host of other goodies. Like a free Level 9 game, *Gnome Ranger*. And top adventure writers **MAGNETIC SCROLLS** (the people behind *The Guild of Thieves* and *The Pawn* amongst others), are busy writing an **EXCLUSIVE**, state of the art mini-adventure for Official Secrets members only. Only Official Secrets members will get to play this game – it's never going to be in the shops or be available elsewhere: a collector's item if ever there was one! As a member of Official Secrets, you get a magazine every two months – called CONFIDENTIAL, it is packed with interviews and features, with a special emphasis on adventuring. Your **FREE** Magnetic Scrolls disk containing the mini-adventure (we're keeping the name secret) comes with Issue Two.

OUR CLUBS – The Full Story

When you join SPECIAL RESERVE, you get a membership card (quote your membership number to buy games) and three editions of our Buyers Guide. You don't have to buy a specified number of games a year – buy as few or as many as you like. Every time you buy a game, you get the current update to your Buyers Guide – and we even provide a binder for you to keep the updates in.

It costs just £4.00 (UK) or £5.00 (other EEC countries) to become a member of Special Reserve for a year. Nearly all games we sell, even the latest releases, are under half price – and we have some special offers that save you even more money! Check out the example prices on this page.

There IS a catch, but not a very big one. Post and packing costs you £1.50 per game if you order by post, £2.50 if you order by phone or £3.00 if you live outside the UK. Go on, add the P&P price to the price of our games opposite – we're still the cheapest, aren't we?

You can't buy ANYTHING from us at all, unless you are a member, but you can join and buy a game (or games) from us at the same time.

SMALL PRINT: We don't accept members from outside the EEC (sorry); all games are subject to availability; we try to despatch your order the day we receive it, but can't promise to get a game to you in less than seven days. You can order new releases in advance, and we'll send your game out the day it is released.

That's SPECIAL RESERVE . . .
now for OFFICIAL SECRETS

CONFIDENTIAL!

OFFICIAL SECRETS is for people who want the best games at the best prices AND a whole lot more. It's a club based around a magazine called CONFIDENTIAL. Six times a year, CONFIDENTIAL is mailed to you – a year's subscription costs £19.95 in the UK and £24.95 if you live elsewhere in the EEC. But you get a lot more than a magazine. **Join Official Secrets and you get:**

● **FREE MEMBERSHIP** of Special Reserve. Which saves you £4.00 and allows you to **BUY GAMES AT HALF PRICE.** Full details of the benefits of Special Reserve membership appears elsewhere on this page.

● "Go out and buy *Gnome Ranger*, pronto" said Atari ST User. Join Official Secrets and you don't have to – a free copy of Level 9's *Gnome Ranger* is included with your membership pack. If you've already got a copy of this humorous three-part adventure – tick the box for the Surprise Alternative when you join.

● **FREE MAGNETIC SCROLLS GAME.** Issue Two of CONFIDENTIAL comes with an exclusive Magnetic Scrolls mini-adventure, written specially for Official Secrets members who have a disk drive on the ST, Amiga, PC, Mac, PCW, Commodore or Spectrum (Plus 3). If you have a cassette system or another machine, we've got something else for you that's just as stunning – well nearly . . .

● If you get stuck on a game you've bought from us, we're here to help.

● **PRIZE COMPETITIONS.** Like any self-respecting magazine, CONFIDENTIAL runs free-to-enter competitions. For starters, you could win £500 worth of hardware of your choice . . .

● Six issues of CONFIDENTIAL, a professional magazine put together by Graeme Kidd (ex CRASH and THE GAMES MACHINE) and Nick Walkland (ex ORCSBANE "Adventure Fanzine of the Year"). CONFIDENTIAL gives you all the inside stories from the adventure world and includes news, interviews and opinions on adventure games, simulations and strategy games along with columns, articles and features by leading writers. It's a real, A4 magazine that we'll be selling for £2.00 a copy, but as a member, you're already a subscriber to CONFIDENTIAL.

EXAMPLE PRICES
(Members Only - plus P&P)

ST		
Corruption	(£24.95)	£12.47
Virus	(£19.95)	£9.97
Oids	(£19.99)	£9.99
Dungeon Master	(£24.99)	£12.49
Captain Blood	(£24.95)	£12.47
Carrier Command	(£24.95)	£12.47
SPECIAL OFFERS!!		
Tracker	(£24.95)	£7.95
Silicon Dreams	(£19.95)	£6.95
AMIGA		
Corruption	(£24.95)	£12.47
Barbarian	(£24.99)	£12.49
The Three Stooges	(£29.99)	£14.99
The Sentinel	(£19.95)	£9.97
Photon Paint	(£69.99)	£34.99
Balance of Power	(£29.95)	£14.97
SPECIAL OFFERS!!		
Golden Path	(£19.95)	£6.95
Silicon Dreams	(£19.95)	£6.95

MEMBERSHIP APPLICATION & ORDER FORM

Complete this coupon or write the details clearly on a sheet of paper - or phone our New Members Department on 0279 600204

NAME _____

ADDRESS _____

_____ POST CODE _____

COMPUTER _____ (delete where not applicable) DISK: 5.25"/3.5"/3"/TAPE

I want one year's subscription to:

SPECIAL RESERVE UK £4.00 or EEC £5.00 £

or

OFFICIAL SECRETS UK £19.95 or EEC £24.95 £
WITH Gnome Ranger ☐ Surprise Alternative ☐

I'd like to buy a game as well (optional)

TITLE _____ PRICE £

Post & Packing per game £1.50 UK or £3.00 EEC £

TOTAL £

delete where not applicable

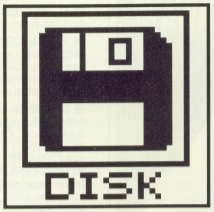
Payment by Cheque/Postal Order/Visa/Access/American Express
(Payments from outside the UK must be made by credit card)

My credit card number is: Name and address must be as above

SIGNATURE _____ EXPIRY DATE _____

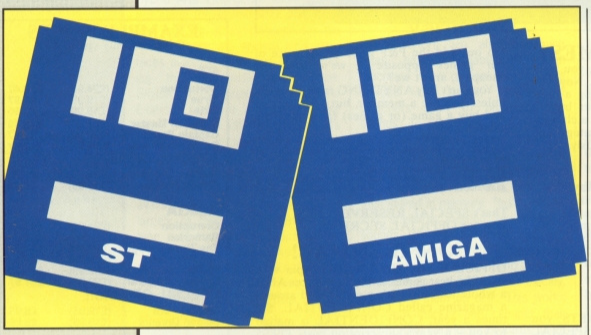
Cheques or Postal Orders payable to:
OFFICIAL SECRETS or SPECIAL RESERVE
Dept. ST/A PO BOX 847, HARLOW CM21 9PH

Special Reserve and Official Secrets are trading names of Inter-Mediates Ltd.
Registered in England Number 2054713.



DISK EXTRA

***ST Amiga Format's* unique dual format disk gives you the best of both ST and Amiga worlds!**



ST

65 POWER BASIC
A very full demo of HiSoft's impressive BASIC compiler. Graphics, sound, speed – it's got the lot. Try it out.

65 PRODUCT SELECTOR
An interactive guide to all the best ST software. Tell it your price range and area of interest, and back come all the suitable packages.

65 DIGICALC
Demo of Digita International's new ST spreadsheet as reviewed in this issue. Have a play and see what it can do for you.

67 DESKTOP ACCESSORIES
Two nifty utilities for hackers'. One tells you exactly how much free memory the system has to play with, the other lets you view and alter any data held on disk or in memory.

67 MEGAROIDS
One for the games addicts – time to reminisce once again with this excellent version of Asteroids. Fast and furious, mono or colour shoot-'em-up that looks good against much of today's software.

68 MEGABLIT
Terrific art package that works in any resolution. The screen acts as a window on an enormous work area of 384 by 256 pixels in low res and 2560 by 1920 pixels in high res.

AMIGA

65 STARRAY
Think you've seen fast scrolling in 3D? Not if you haven't seen StarRay. Here's a full playable level of Logotron's new Amiga masterpiece.

65 PRODUCT SELECTOR
As Amiga sales boom, there's more and more application software out and about. So how do you find out who's doing 'what, where and at what price? Simple – run the ST Amiga Format Product Selector.

68 VILBM
Set up a slide show of all your Amiga graphics pictures. It can display graphics saved with virtually any Amiga graphics package.

69 RSLCLOCK
A stunningly useful utility for seasoned CLI hackers and casual Workbench users alike. It puts up a continuous clock display on the screen, shows free disk and memory space, and allows you to open up a new CLI from a menu if you get stuck.

WE'RE PAYING £800! FOR GOOD SOFTWARE ON OUR COVER DISK

We're looking for good quality software to fill our cover disk each month. If you're a nifty programmer you could earn big bucks from your labours – games, business applications, utilities, or anything of general interest. We're also interested in any especially original graphics you may have created with art packages, either for inclusion on the disk or printing in the magazine.

Turn to the end of this section for more details on how to get your software onto the ST Amiga Format cover disk.

POWER BASIC

All STs

Last month when we had a look at the different varieties of BASIC available on the ST, HiSoft's Power BASIC came out as the all-round winner. Now you can make your own mind up by experimenting with this full-featured demo!

Starting this month in *ST Amiga Format* is a BASIC tutorial series, and on the ST side we've decided to use HiSoft's excellent Power BASIC as the basis. Month by month we'll take you through Power BASIC's commands. Turn to the BASIC tutorial beginning on page 76 for full details on getting your first program up and running.

If you're already a seasoned programmer you'll want to get stuck right in. Just open up the PBASIC folder, then double-click on the PBASIC.PRG program icon. After a few seconds you'll be confronted with a flashing cursor – this is Power BASIC's program editor. Just type in a program, then from the Program menu select the 'Run' option. This compiles your program to memory and runs it.

You'll see a few sample programs in the folder which you can load and look at to see how Power BASIC is written. It is compatible with ST BASIC, so if you're familiar with that you can type in your favourite programs straight away and see how much faster they run – you'll be impressed! Also in the PBASIC folder you will find a file called PBASIC.DOC – this contains a technical summary for the expert of all the commands available on this demo version, with a syntax of how to use them.

This demo has been cut down in a few ways – after all, HiSoft want you to pay them a fair price for the full system! All the commands are there, but you can't load or save programs to disk. The demonstration programs can be loaded, but only because they are specially encoded. You won't be able to load any files apart from those provided on the *ST Amiga Format* disk.

STARRAY

All Amigas ■ Mouse or joystick

We're always trying to bring you the best games demos, but this time we reckon we've excelled ourselves. A pre-production demo of StarRay appeared in the Format offices recently, and we were so impressed by the 3D depth scrolling graphics that we collared Logotron's programmers and got them to specially compact the demo to fit on our disk.

Remember Defender? The classic arcade game from the early 80s? StarRay is based on the same theme, but the graphics move it into a whole new dimension. Logotron call it a "horizontal parallax scrolling shoot-'em-up" – sounds impressive, even if no-one knows what it means!

The demo is self-booting – just reset your Amiga and put the Format master disk in the drive. There's about five seconds of psychedelic flashing on the screen as it loads – don't worry about this, and don't touch the Amiga while it is doing it. Press any mouse/joystick button to start. There are no sound effects on this demo, so it's great for playing into the small hours.

Don't just sit there, load it up and get zapping!

PRODUCT SELECTOR

ST and Amiga

When you want to buy software for your ST or Amiga, what do you do? Look through dozens of back issues of magazines, scour the adverts and try to work out whether a MegaPack is a database, a disk box or an infectious disease?

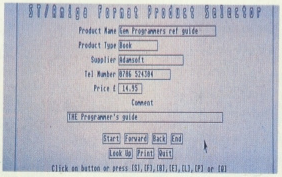
Now we've done all the hard work for you. On this month's disk you will find an interactive database with a complete list of products that we know of (except games) for both ST and Amiga. If you run the Selector on an ST, all you get is ST products; on an Amiga, all you get is Amiga stuff.

When you run the product selector, there is a short delay while it reads its data file from disk, then you are faced with a screen with boxes labelled 'Product Name', 'Product Type', 'Supplier', 'Tel Num', 'Price' and 'Comment'. Also on the screen are panels you can click on to browse through the data. The first in a list of every ST or Amiga product under the sun is displayed.

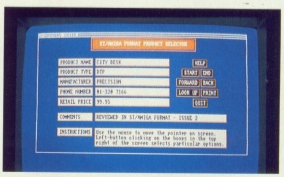
Clicking on 'Start' takes you to the first entry on file, 'End' takes you to the last. 'Forward' takes you forward one record, and 'Back' – surprisingly enough – takes you back one record.

■ MY PRODUCT'S NOT THERE!

If you find your latest Armadillo Breeding package conspicuously absent from either product selector, please let us know so we can update our lists for next time. Even if your software is not of such mass appeal, we'd still like to know about it. Please note, though, that the product selector doesn't carry details of games programs or hardware. ■

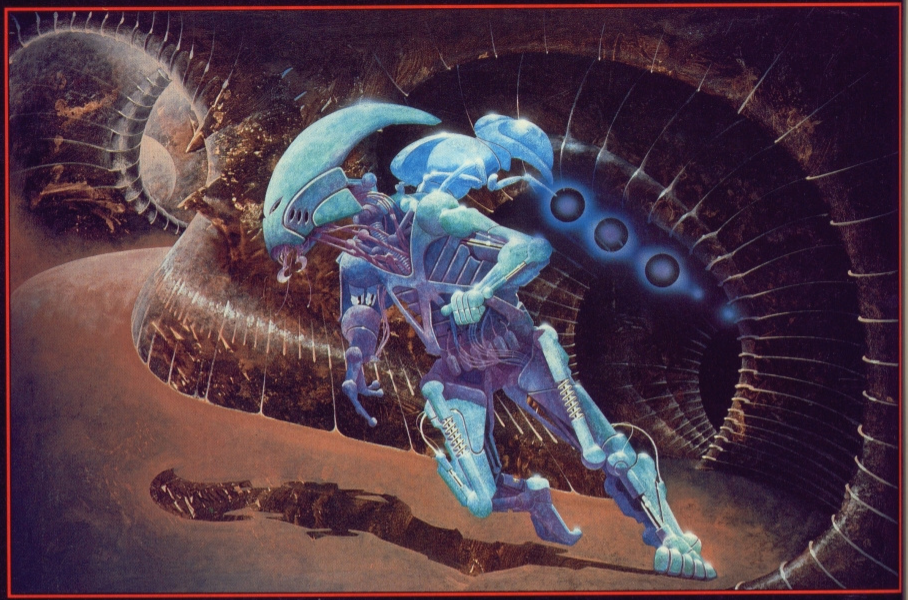

ST/Amiga Format Product Selector
Product Name Gem Programmers ref guide
Product Type Book
Supplier Abacus
Tel Number 0716 521404
Price £ 14.95
Comment
The Programmer's guide
Start Forward Back End
Look Up Print Quit
Click on button or press (S), (F), (B), (E), (L), (P) or (Q)

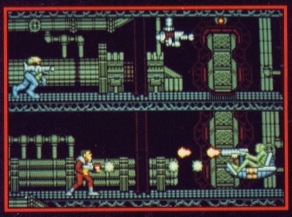
■ *The ST Product Selector*



■ *The Amiga Product Selector*

OBLITERATOR





OBLITERATOR

You are Drak the Last of the Obliterators, a genetically enhanced and awesome fighting machine, bio-engineered for the execution of incredible tasks, the ultimate solution to the most cataclysmic of predicaments.

In the voids of Federation space an alien cruiser has materialised. It is a ship of sinister and foreboding power. Federation defences have been smashed. Earth lies exposed, there is only one hope and you are it!

Summoned by the Federation council, your assignment is to use a prototype matter transporter to infiltrate the alien cruiser. Armed with a particle beam disrupter, lasers and whatever the alien habitat can provide, you must cripple the alien vessel thus enabling its destruction.

OBLITERATOR — £24.95

Other Psygnosis Titles

Terrorpods	— £24.95
Barbarian	— £24.95
Deep Space	— £24.95
Arena	— £24.95
Brataccas	— £24.95
Arena/Brataccas	— £29.95

All available for 512K Colour, Atari ST, Commodore Amiga.

PSYGNOSIS
FREEPOST
LIVERPOOL L3 3AB
UNITED KINGDOM
Telephone: 051-236 8818

PSYGNOSIS

prise, surprise – takes you back one. 'Print' sends the current record's details to the printer, if you have one, and 'Quit' ends your session with the Product Selector. You can use the initial letters of each command as an alternative on the ST version.

The real power of the system comes when you start searching through the data. The idea is that you specify limits on the kind of products you are interested in, and only the products which fit the description are listed. For example, you might want to know about all word processors that cost less than £50 – no problem:

Click on 'Look Up' and you can specify your requirements. When you do this, the boxes go blank and a cursor appears in the 'Product Name' line, so you can type in product details. Using the ↑ and ↓ keys (on the ST) or the [and] keys (on the Amiga), move the cursor down to the 'Product Type' field. Now type `WP` (you could enter any of the categories from the list below, but make sure you type it exactly as it is printed). Move the cursor to the 'Price' field and type `<50`. Press [Return] and the appropriate items are hunted down.

Follow the screen prompts to either print out the current record or skip to the next one. When all the matching records have been run through you will be returned to the main menu to choose another function, or to quit.

The product types you can specify are: BOOK, ACCOUNTS, BUSINESS, COMMS (Communications software), DATABASE, DESK ACC (ST only – Desktop Accessory), DTP (Desktop Publishing), EDUCATION, GRAPHICS, LANGUAGE, MUSIC, SPREADSHEET, UTILITY, WP (Word Processing). Games are not covered – there are too many and details change too fast.

In fact, you can set any field you like – you might want to see all products that Kuma manufacture. Just type `Kuma` in the 'Supplier' category and press [Return]. You could even search for products by phone number if you wanted! Under price, you can use the < (less than), > (greater than) and = (equal) signs to set a numerical limit. Entering `>100` restricts the search to products over £100.

RUNNING IT ON THE ST

From the general CLICK_ME menu program, press [f5] for the Product Selector option.

RUNNING IT ON THE AMIGA

Open the Product Selector drawer, and double-click on Product Selector. The Amiga can be slow to respond to keypresses – be sure you make each keystroke firmly.

ST

First copy and load the disk as described at the end of the Disk Extra section.

DIGICALC

All STs

Digicalc is a new spreadsheet from Digita International aimed at first time users. We've reviewed it fully earlier in this issue – have a read of those pages for a feel of how it works, and a walk-through of a simple application.

To get going, click on DIGICALC.PRG in the DIGICALC folder (or select the Digicalc option from the CLICK_ME menu program). A row of menu titles is displayed on the second line of the screen. These don't work in the normal GEM way – here you have to click the mouse button to call up a sub-menu on the line below. Whenever you are asked to enter data, type it in and press [Return] to proceed. Press [Esc] at any time to abandon a menu and go back to the ordinary screen.

FREE_RAM.ACC to the top level directory of the disk (users of STs with single-sided drives may need to copy the files to a disk other than the back-up of our cover disk), so they are not in any folder. Now reset your ST and they will be loaded. Look on your Desk menu and they'll be there, raring to go.

FREE RAM

Does what it says – select it from the Desk menu and it displays the amount of free RAM in your system.

TINY TOOL EDITOR

Format Health Warning: This utility should only be used by experienced programmers. You can seriously damage your disks by incautious use of it and ST Amiga Format can't accept any responsibility for such damage.

Tiny Tool allows you to edit any byte in memory or on a disk. It runs by a fairly self-explanatory series of click-panels. You can enter data in decimal or hex, and nothing is changed until you explicitly click the Write panel.

When editing disks, drive A is drive 0 to Tiny Tool, drive B is 1. Legal sectors are 1 to 9, legal tracks 0 to 79. Reset takes you back to Tiny Tool's opening screen. To quit, click on the Close Window icon.

A1 : "Gloves

Attr	Copy	Del	File	Goto	Hold	Ins	Misc	Os	Tit

A:PRODUCT B:PRICE C:20% D:30% E:40% F:50% G:60% H

1	Gloves	20.00	16.00	14.00	12.00	10.00	8.00
2	Hat	25.00	20.00	17.50	15.00	12.50	10.00
3	Coat	64.00	51.20	44.80	38.40	32.00	25.60
4	Socks	5.99	4.79	4.19	3.59	2.99	2.40
5	Tie	12.95	10.36	9.06	7.77	6.47	5.18
6							
7		127.94					
8							
9							
10							

■ *Digicalc crunching the numbers*

There's a demonstration file on the disk, called DEMO.SPR. To load this click on the 'File' menu, choose 'Load' and type `DEMO`[Return]. Experiment by typing new data into cells and seeing how the values in other cells change.

In this demo version, there is no facility to save files to disk. However, you can print your spreadsheets out.

DESKTOP ACCESSORIES

All STs

In this folder are two handy utilities which will add themselves to your 'Desk' menu and can be used whenever you are running a GEM program.

These utilities can't be run by clicking on their icons. To use them, open the ACC folder and drag the files TINYTOOL.ACC and

MEGAROIDS

All STs

Get yer 10p's out. Well, figuratively speaking. This is a wonderfully nostalgic version of the old arcade classic Asteroids, complete with green cheese boulders flying around and UFOs buzzing you.

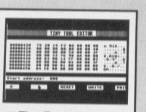
Run Megaroids either from the CLICK_ME menu or by clicking on MEGAROID.PRG in the MEGAROID folder. A title screen shows the keys you need and along the top of the screen are a row of menus which you use in the normal GEM way. To start the game put the mouse pointer over 'Start' and choose a 1 or 3 game sequence.

The secret is to bang the rocks together, guys!

DISK

AMIGA PRODUCT DETAILS

A lot of Amiga software is imported from the U.S. Rather than quote American phone numbers, where we don't know of a U.K. distributor the phone number slot is blank. Two helpful distributors who import a lot of U.S. stuff are The Amiga Centre Scotland (031-557 4242) and HB Marketing (0895 444433) – they should be able to get hold of most things.



■ *Tiny Tool running over the STs memory, peeking and poking to its heart's content*

XORBITANT

Exclusive-ORing, pronounced Eggsoaring by the cognoscenti *(pronounced Cog-no-sent-ee – Ed)*, is a clever graphics technique for merging two images together. Given a basic pixel image, when you superimpose another one the result is worked out as follows: if both images had a blank pixel in a spot, the final pixel is blank too; if either one *or* the other had a white pixel then the result is white; if *both* image pixels were white, the result is blank. One neat trick with XORing is that if you take an image and redraw it over itself in XOR mode, it is deleted. This can be useful!

DISK

■ *Megablit happily working on an imported Degas file*

MEGABLIT

All STs

A window-based paint program with very large work area and many powerful drawing facilities that runs in any resolution. Scroll bars are used to move around the massive work area (384 by 256 pixels in colourful low resolution up to a staggering 2560 by 1920 in monochrome).

Unlike other graphics utilities which divide memory up into eight or so segments for pictures, Megablit treats memory as one large picture; the screen is used as a small window through which to look. You can draw lines, arcs, rectangles, ovals and pies; you can zoom, snap to grid, cut and paste, and all the usual art package functions.

When you paste new graphics over old, or draw lines, Megablit has four 'blit', or line-drawing, modes. Standard 'replace' mode causes previous drawings to be erased and 'transparent' mode simply draws lines without erasing what's underneath. 'Xor' exclusive-ors whatever is on the screen with the new graphics, which is a more subtle way of superimposing two images than using Transparent mode – try it and see. 'Inverse' mode is like standard mode except it draws black where there would be white and vice-versa.

Megablit can load Degas files, so you can use you existing art files as the basis for a massive poster! Experiment with the menus and see what's there

AMIGA

First, copy and load the disk as described at the end of the Disk Extra section. These programs run on both the Amiga 500 and the 2000. We have been unable to test them on older versions of the Amiga 1000.

VILBM

All Amigas

You don't need to be told that the Amiga is the ideal machine for creating sophisticated graphics. Loads of colours, high resolution, and no shortage of superb art programs. But once you've got a diskful of masterpieces, what do you do with them?

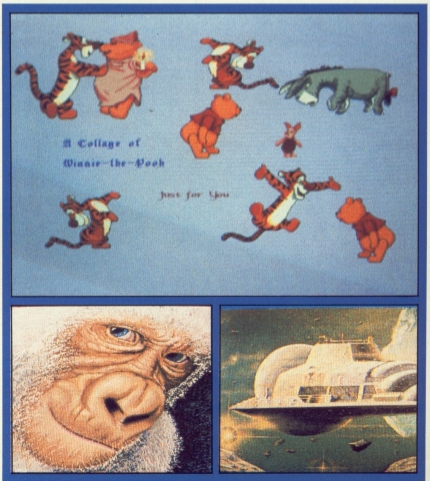
Vilbm is a slide-show utility which lets you display almost any set of Amiga graphics files one after the other. You give it a series of files, and it displays them in turn. It doesn't matter what resolution you saved the picture in.

In the Vilbm drawer on the disk is Vilbm itself and three saved art pictures, under the picturesque mountain icons. Vilbm uses the Amiga's 'extended selection' mechanism – covered more fully in the Workbench tips pages later in this issue. To display just one picture, click once on the picture file you want to show, so the icon is highlighted, then hold the [Shift] key down and double click on the Vilbm icon. The picture is displayed until you press the left mouse button, whereupon you are returned to the Workbench.

Try displaying all the pictures in the folder: click on the first picture icon, hold the shift key down and click on the rest, then shift-double click on Vilbm. The pictures are displayed in the order you clicked on them, pausing for you to left mouse click between each.

Vilbm also works from the CLI. To display the three pictures Gorilla, Poohcollage and Spaceship you would type `Vilbm GORILLA POOHCOLLAGE LEGEND`, ie. just put the filenames one after the other on the command line, separated by spaces.

If you run Vilbm without a picture file (by double click on it's icon alone) it shows you a few screens of help



■ *Click, Shift-Click, Shift-Click and Shift-double click sets your slide show going.*

■ FUNNY NAME?

For those of an inquiring nature, Vilbm stands for "View Interleaved Bit Map". In practice, ILBM files are the same as the famous 'IFF' (Interchange File Format) files that all Amiga graphics programs use. Any art package that claims to save in IFF format will work fine with Vilbm.

■

text and plugs for other programs by the same author.

RSLCLOCK

All Amigas

First impressions can be deceptive – don't make the mistake of thinking that RSLClock is just another clock display program. Behind its simple visage are a clutch of mindbogglingly useful utilities to help the simple Workbench user and seasoned CLI hacker alike.

You can arrange to have a constant display of how much free memory you have and how much free disk space there is; you can call up a new CLI window; you can blank the screen off to save your valuable phosphor, and of course you can have the time and date displayed for you.

The simplest way to run RSLClock is from the Workbench. Open up its drawer and double-click on its icon. You will see the title bar at the top of the screen change to show something like "RAM: 667K Time:12:29:45 PM". What has happened is that a new window has been opened and positioned over the Workbench title bar; the window is only one line deep, with no scroll bar or close gadgets. You can move it like any other window by dragging it around.

The RSLClock display is actually a standard window title bar. It *does* have a close gadget at its left, and send-to-back and bring-to-front gadgets at the right, although the usual symbols for these aren't shown. If you click the mouse at the extreme left – where the close gadget normally is – RSLClock will shut down. The send-to-back and bring-to-front gadgets are also there hidden at the extreme right of the bar. RSLClock will pop to the front of the display at every change of minute count, so even if you have sent it to the back it will reappear!

RSLClock can also be run from the CLI. Note that because RSLClock is a permanently running window it doesn't finish so the CLI prompt will not return – use RSLClock's 'Open New CLI' command to get a new CLI window.

Options

RSLClock has a menu for extra options. First, make the RSLClock display the currently active window, by clicking the left mouse button on it. (Don't click at the left end or you'll hit the undisplayed Close gadget!) Now hold the right mouse button down and you'll see the 'Options Available' menu title appear at the top of the screen.

Open new CLI

If you are working in the CLI and a task locks up on you, there is normally no way to type commands in to the Amiga. Use this option to call up a new CLI window.

Enable Backdrop Screen

A totally blank screen is created behind your current windows. If you have to leave your Amiga for a long time and you don't want to turn it off, you can save your monitor's phosphor. With the backdrop enabled, first make the RSLClock display the active window (click on it) then double click the right mouse button. The screen blanks – press any key to reactivate the display.

Modify PopUp Feature

Normally the RSLClock display pops to the front every minute even if you send it to the back. You can stop it popping up by selecting 'Disable all PopUp', and reactivate it by 'Enable Standard PopUp'.

Enable 24 Hour Format

Toggles between 12 hour AM/PM and 24 hour display

Enable Free Disk Space

Allows you to have a continuous display of how much space is free on one disk drive. You can choose from DF0:, DF1: and DH0: (a hard disk). Unfortunately it doesn't allow you to specify DF2:, which is what the A2000 calls its second drive.

Show Fast & Chip memory

Splits the free memory display into 'Fast' and 'Chip' memory counts. This doesn't have any effect on an unexpanded A500.

Change Window Colors, Highlight Colors, Shrink Window Smaller, Credits

Try them and see!

HAVING TROUBLE WITH THE DISK?

We have done our best to check that the programs supplied on this month's disk are simple to use, error free and have no known viruses. However, we cannot answer telephone queries on using the software, and we do not accept liability for any consequences of using the programs.

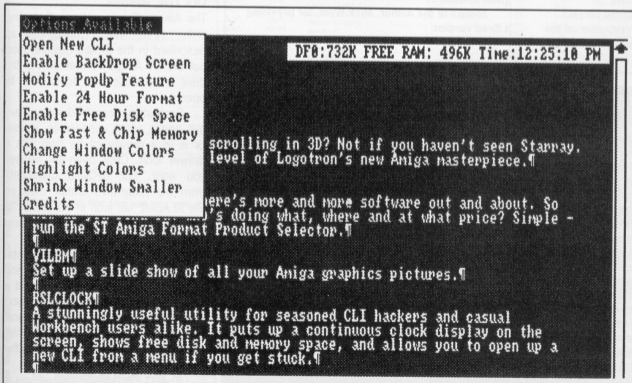
If your ST Amiga Format disk is faulty – and out of 40,000 duplicated some are unfortunately bound to be – you should send it back for a free replacement to:

ST Amiga Format August Disk, DisCopy Labs, 20 Osyth Close, Brackmills, Northampton NN4 ODY.

AMIGA OWNERS: if your Amiga refuses to accept the disk, try using the DISKDOCTOR utility on your Commodore Workbench disk to rescue it before sending off for a replacement. We covered DISKDOCTOR fully on page 93 of issue 1. Don't worry that every track gives you a 'hard error', this is the Amiga being unable to read the ST software on the disk.

DISK DOCUMENTATION

Many of the programs on ST Amiga Format disk are Public Domain. In such cases we've simply passed on their standard documentation files unchanged, as is required by the PD code of practice. Some of the phrasing is 'idiosyncratic', shall we say, so please don't blame us for misspellings!


Options Available
Open New CLI
Enable BackDrop Screen
Modify PopUp Feature
Enable 24 Hour Format
Enable Free Disk Space
Show Fast & Chip Memory
Change Window Colors
Highlight Colors
Shrink Window Smaller
Credits
DF0:732K FREE RAM: 496K Time:12:25:10 PM
scrolling in 3D? Not if you haven't seen Starray,
level of Logotron's new Amiga masterpiece.¶
here's more and more software out and about. So
's doing what, where and at what price? Simple -
run the ST Amiga Format Product Selector.¶
¶
VILBM¶
Set up a slide show of all your Amiga graphics pictures.¶
¶
RSLCLOCK¶
A stunningly useful utility for seasoned CLI hackers and casual
Workbench users alike. It puts up a continuous clock display on the
screen, shows free disk and memory space, and allows you to open up a
new CLI from a menu if you get stuck.¶
¶

■ ***RSLClock running at the same time as a word processor, Scribble. You can see at a glance how much free RAM and disk space there is, by the display at the top right of the screen.***

DISK

HOW TO USE THIS DISK

The ST Amiga Format cover disk is a special format disk which both the ST and the Amiga can read. Even if you are a seasoned computer user, please read these instructions carefully or you could permanently damage the disk.

The first thing you must do is make a backup copy of the disk. Because of the special format, the normal bulk disk copying methods as recommended in the Amiga and ST manuals won't work. Instead you will need to format a blank disk and copy all the files you need individually. Don't panic, this isn't at all difficult.

ON THE ST (assuming a single drive machine)

1. Take a blank disk and format it in the usual way.
2. With the blank disk still in the drive, double click on the A disk icon to open up the (blank) contents window.
3. Now drag the icon for disk B into the open window of disk A. This will copy all the files one by one off the master disk to your new disk. *Make sure that the master ST Amiga format disk is write protected* (the sliding tab should be back so that the hole is open) and put it in the disk drive when asked for disk B.
4. You will now be prompted at various times to insert disk A and disk B while copying takes place. There will be a lot of swapping to do on a single drive ST! Disk B should be the master disk, disk A your newly formatted copy.

If you want to cut down on disk swaps and you understand enough about the ST's GEM system, you can set up a RAM disk using the utility provided on the July 1988 disk and use that as an intermediate step.

ON THE AMIGA (assuming a single drive A500)

1. Start your Amiga up with your normal Workbench boot disk.
2. Take a blank disk and initialize it in the usual way.
3. *Make sure that the master ST Amiga format disk is write protected* and put it in the disk drive. Double click on the disk icon that appears. Drag any icons you see in the contents window onto the 'RAM disk' icon.
4. When the disk activity light has gone out, put your newly formatted copy disk in the drive instead. Double click on the RAM disk to open its window up, and drag icons from that onto the new disk icon. This will copy the files one by one.

The programs may not all fit in the RAM disk at once on an A500 – do whatever will fit, then after step 3 delete them from the RAM disk by clicking once on each and, holding the right mouse button down, selecting 'Discard' from the Workbench menu. Then repeat steps 2 and 3 for the rest of the icons.

Using the programs

ON THE ST

When you turn the ST on and put your working copy of the disc in the drive, you will see a window opened with the contents of the disc displayed.

One of the icons is called CLICK_ME.PRG – just do what it says, double-click to run it. Up comes a list of the disk contents. Type the number of the program you want to run, and you are asked whether you want to read the disk help file or not.

You will now be asked whether you want to run the program or not. For technical reasons TINYTOOL.ACC and FREE_RAM.ACC *cannot* be run from CLICK_ME on the current disk. You can use CLICK_ME to read their documentation files, so follow the running instructions that appear for each.

ON THE AMIGA

The Amiga disk is not a self-starting disk. First, run Workbench as described in the Amiga manual. Now put the ST Amiga Format disk in the drive and double-click on its icon to open it.

Each utility described in the previous pages either appears as an icon or is in a drawer of its own with a drawer icon. Click open the drawer you want. For detailed comments from the program's author click on the README file icon in the folder; to run the program click on the main icon.

When you click on a documentation file, a new window is opened and the text is displayed a screenful at a time. To continue reading the next screenful, press any key; to cancel the reading process click on the Close gadget at the top left of the text window.

The CLICK_ME icon gives you a brief summary of the disk's contents and how to use it.

COPYING STARRAY

StarRay is a self-booting program and you can't copy it to your backup disk simply by dragging its icon. As long as the write-protect tab on the master disk is open you should be able to run it from that quite safely.

StarRay can be copied from the CLI. You need to FORMAT and INSTALL a disk, then copy onto it the file STARRAY_DEMO and the entire S directory. Your copy disk should now self-boot with StarRay

LAST MONTH'S MONO ST EMULATOR

The ST mono emulator on last month's ST Amiga Format cover disk appears not to work on newer STs – this is due to a difference in the ROMs. (Boy, the number of phone calls we've had!)

On this month's disk is a corrected version which will work on all STs. It doesn't appear on the CLICK_ME menu program – instead you will find a folder called MONOWARE on the Desktop. Open this up and use the MONOWARE.PRG program in it in place of last month's version. Full instructions were given in issue 1.

Thanks to the author, Mick West, for providing a fixed version.

WE WANT TO GIVE YOU MONEY!

If you've got any programs for either ST or Amiga which you think other readers would find useful, interesting or amusing, we'd like to know. Here's how to go about securing international fame for yourself:

1. Only send in programs on 3.5" disks; we cannot accept printed listings.

2. Make sure your disk is clearly labelled with your name and address, the program name(s), and marked 'ST' or 'Amiga'.

3. Make sure there is a documentation file on the disk called README.

4. Enclose a clear covering note explaining what the program does, and if you possibly can please also send a printout of any on-disk documentation files. Remember your address and telephone number. Include a stamped return envelope for the disk if you want it back.

5. THIS IS IMPORTANT: there must be a signed statement that the program is yours and that you are prepared to assign publication rights to ST Amiga Format. Use the following wording:

The program/s (write the title here) is/are submitted for publication by ST Amiga Format magazine. It is my own work and has not been submitted for publication elsewhere.

Signed ...

If we accept your program, we will get in touch with you before publication to agree terms and payment rates. We will evaluate all submissions in a batch once a month, so please allow up to 40 days for return of your disks. We will only send back disks with adequate return postage and packing.

6. If you send us a disk with a virus on it, we reserve the right to send round the heavy mob in the small hours and do unspeakable things to your pet budgie. Seriously, since we've already given you Virus-killer programs (in Issue 1), do check your disks very carefully.

S.D.C.

309 Goldhawk Road, London W12 8EZ

OPEN TO THE PUBLIC 10am-8pm 6 DAYS

BUY BY PHONE
RING 01-741 1222
01-995 3652
0525 371884

PRICE PROMISE

If you wish to purchase any product from our list and find that you can buy the same product cheaper from another mail order company, simply enclose the lower amount, stating the name of the other company and where you saw the advert. (It must be the current issue). Price Promise does not apply to other companies "Special Offers".

ENQUIRIES
RING 01-748 3597

TITLE	ATARI ST	AMIGA
Aargh	17.45	17.45
Alien Syndrome	13.95	13.95
Bad Cat	13.95	17.45
Barbarian (Palace)	9.50	13.95
Barbarian (Psygnosis)	17.45	17.45
Backlash	13.95	13.95
BMX Simulator	9.50	9.50
Balance of Power	20.95	20.95
Bermuda Project	17.45	17.45
Better Dead Than Alien	13.95	13.95
Bubble Bobble	13.95	13.95
Bionic Commandos	13.95	17.45
Buggy Boy	13.95	N/A
Black Lamp	13.95	N/A
Captain Blood	17.45	N/A
Carrier Command	17.45	N/A
Crazy Cars	13.95	13.95
Combat School	13.95	17.45
Corruption	17.45	17.45
Dark Castle	17.45	17.45
Defender of the Crown	20.95	20.95
Deja Vu	20.95	20.95
Dungeon Master	17.45	N/A
ECO	13.95	17.45
Enduro Racer	9.50	N/A
Enlightenment	N/A	13.95
F15 Strike Eagle	17.45	N/A
Fire and Forget	13.95	17.45
Flight Simulator II	27.50	27.50
Flight Sim Scenery Discs 7 or II	17.45	17.45
Flight Sim Western Europe Scenery Disc	13.95	13.95
Flight Sim Japanese Scenery Disc	13.95	13.95
Flintstones	13.95	13.95
Firepower	N/A	17.45
Feud	6.95	6.95
Football Manager II	13.95	13.95
Foundations Waste	17.45	N/A
Garrison I or II	N/A	17.45
Goldrunner I or II	13.95	17.45
Guild of Thieves	17.45	17.45
Gee Bee Air Rally	13.95	13.95
Gnome Ranger	9.95	9.95
Golden Ranger	13.95	13.95
Get Dexter II	13.95	N/A
Gauntlet	13.95	N/A
Gunship	17.45	N/A
Hitchhikers Guide	20.95	20.95
Hunt for Red October	17.45	17.45
Hotball	17.45	17.45
Impact	9.50	9.50
Impossible Mission II	17.45	N/A
Insanity Fight	N/A	17.45
I Ball	13.95	N/A
International Soccer	13.95	13.95
Indoor Sports	13.95	17.45
Ice Hockey	13.95	17.45
Ikari Warriors	13.95	N/A
Jewels of Darkness	13.95	N/A
Jinxter	17.45	17.45
Joe Blade	N/A	17.45
Jinks	6.95	6.95
Jet	N/A	27.50
Jump Set	9.95	9.95
Karate Kid 2	17.45	17.45
Kingot Chicago	N/A	17.45
Kikstart I	N/A	6.95
Knight Orc	17.45	16.95
Kings Quest Pack	16.95	16.95
Legend of the Sword	17.45	N/A
Las Vegas	6.95	6.95

TITLE	ATARI ST	AMIGA
Leaderboard	16.95	17.45
Leaderboard Tournament	6.95	6.95
Leisuresuit Larry	13.95	17.45
Leather Goddess of phobos	20.95	20.95
Leathernecks	13.95	13.95
Mach 3	13.95	13.95
Mercenary Compendium	17.45	17.45
Mindfighter	17.45	17.45
Mission Elevator	13.95	13.95
Masters of the Universe	13.95	N/A
Mouse Trap	9.95	9.95
Mission Genocide	6.95	N/A
Ninja Mission	6.95	6.95
North Star	13.95	N/A
Obliterator	17.45	17.45
Oids	13.95	N/A
Outrun	13.95	N/A
Pawn	17.45	17.45
Pandora	13.95	13.95
Powerplay	13.95	13.95
Pacland	13.95	13.95
Phantasm	13.99	13.99
Pink Panther	13.95	13.95
Platoon	13.95	N/A
Predator	13.95	N/A
Plutos	9.95	9.95
Police Quest	17.45	N/A
Pool	6.95	N/A
Project Stealth Fighter	17.45	N/A
Phantasie 3	17.45	17.45
Rimrunner	13.95	N/A
Return to Genesis	13.95	13.95
Road Blasters	13.95	17.45
Roadwars	13.95	13.95
Rolling Thunder	13.95	24.95
Rampage	N/A	17.45
Spidertronic	13.95	N/A
Star Wars	13.95	13.95
Sidewinder	6.95	6.95
SDI	20.95	20.95
Scrabble Deluxe	13.95	N/A
Shadowgate	17.45	17.45
Strike Force Harrier	17.45	17.45
Strip Poker II Plus	9.95	9.95
Spitfire 40	17.45	N/A
Silent Service	17.45	17.45
Star Trek	13.95	N/A
Sinbad and the Throne of the Falcon	N/A	20.95
Soccer Supremo	10.50	10.50
Stargilder	17.45	17.45
Space Quest II	17.45	N/A
Supersprint	9.99	N/A
Silicon Dreams	13.95	13.95
Sentinel	13.95	13.95
Seconds Out	13.95	13.95
Sky Fighter	N/A	9.95
Scruples	13.95	N/A
Shackled	13.95	N/A
Space Harrier	13.95	N/A
Stargilder II	17.45	17.45
Streetfighter	13.95	17.45
Sundog Frozen Legacy	10.50	10.50
ST Wars	13.95	N/A
Tanglewood	13.95	N/A
Time Bandits	13.95	13.95
Terramex	13.95	17.45
Terropods	17.45	N/A
Tetris	13.95	13.95
Thai Boxing	6.95	6.95
Thunderboy	N/A	13.95
Thrust	6.95	N/A

TITLE	ATARI ST	AMIGA
Time and Magik	13.95	13.95
Trivial Pursuit	13.95	N/A
Top Gun	13.95	N/A
Tour De Force	13.95	N/A
Trantor (Last Stormtrooper)	13.95	N/A
Uninvited	20.95	20.95
UMS	17.45	17.45
Ultima II	17.45	17.45
Ultima III	17.45	17.45
Ultima IV	17.45	N/A
Virus	13.95	N/A
Vampires Empire	13.95	13.95
Verminator	17.45	13.95
Wizball	13.95	17.45
War Game Construction Set	17.45	N/A
Warlocks Quest	17.45	N/A
Western Games	13.95	13.95
Winter Games	17.45	17.45
The Wall	N/A	9.95
Winter Olympiad 88	13.95	13.95
War Hawk	6.95	N/A
Xenon	13.95	13.95

SPECIAL OFFERS	ST	AMIGA
Borrowed Time	7.99	15.95
Ballyhoo	8.99	19.99
Bureaucracy	8.99	23.50
Enchanter	8.99	19.99
Infidel	8.99	19.99
Lurking Horror	8.99	17.45
Mind Forever Voyaging	8.99	23.50
Mindshadow	8.99	15.95
Moonmist	8.99	19.99
Planetfall	8.99	19.99
Sorceror	8.99	19.99
Spellbreaker	8.99	20.99
Star Cross	8.99	19.99
Stationfall	8.99	20.99
Suspect	8.99	9.99
Trinity	8.99	13.50
Wishbringer	8.99	19.99
Witness	8.99	19.99
Zork I, II or III	8.99	19.99

BUSINESS UTILITY	ATARI ST	AMIGA
Advanced Art Studio	15.95	N/A
Art Director	37.50	N/A
Analyze II	N/A	99.50
Digi Drum	18.50	N/A
Devpac ST	37.50	N/A
Fast Basic (disc)	33.50	N/A
Fast Basic (rom)	67.50	N/A
Film Director	44.99	N/A
Graphic Tablet	215.50	215.50
Fleet St Publisher	86.50	N/A
Lattice C 4.0	N/A	120.50
Lattice C Compiler	74.95	N/A
Lisp	99.50	99.50
Lattice C Professional	N/A	185.00
Macro Assembler	37.50	N/A
Music Studio	15.95	23.50
Pascal	67.50	67.50
Paintworks	23.50	N/A
Pro Sound Designer	45.00	N/A
Pro Sprite Designer	27.50	N/A
Quantam Paint	12.95	N/A
Super Conductor	37.50	N/A
Superbase Professional	180.50	180.50
S.T.A.C	27.50	N/A

S.D.C. ORDER FORM
Please send the following titles. BLOCK capitals please!
Type of computer _____ **ST/AMIGA**

	Amount

Total Enclosed £

Name _____

Address _____

_____

_____

_____

Tel. No. _____

4 GREAT TITLES
GAUNTLET
INDIANA JONES
ROADRUNNER
METRO CROSS
RRP £24.99 ...
Our Price £15.99

Please make cheques or postal orders payable to SDC
Price includes P&P within the U.K. Europe please add £1.00 per disc
Elsewhere please add £1.50 extra per tape

Visit our New Shop 18 Market Square- Leighton Buzzard Beds

C TIPS PUBLIC KNOWLEDGE

The Amiga has the most active Public Domain sphere of any microcomputer around today. There's a staggering amount of high quality, useful software out there – ask, pay a copying fee, and ye shall receive.

WEIRD!OE@S

Sometimes the Readme file with a PD program is called 'POSTER' – this is because PD software in America is often distributed by 'posting' it to bulletin boards, and a POSTER file is the standard covering text file. You'll often be told by the author "if there are any bugs, contact me at mwm@ngp!dave-sun.com". This weird name is the author's electronic mail address on one of the American comms networks.

It's all to do with modems and comms, you see. America is big. Really big. You thought it was a long way down the road to the chemist's, but that's peanuts compared to America (with apols to Douglas Adams). This, coupled with the fact that AT&T are a lot more together than BT, encourages Americans to use modems and comms a lot more than we do.

There are literally thousands of 'bulletin boards' in the States, acting as clearing houses for software of all kinds. Public spirited types send ('upload') new programs they have written for others to download. These programs are declared 'Public Domain' – they may be freely used and distributed.

Public libraries

If you're in the UK, even if you are one of the lucky few with a modem it isn't really practical to ring up the States for software, and the Bulletin Board network over here is tentative to say the least. Luckily, there are alternative sources. Three or four groups have emerged in America which have collected the best PD software from bulletin boards, and have catalogued it onto a series of disks. You can buy these disks in the UK at a fairly nominal cost – just the price of a blank disk plus a copying charge, about £3 usually. The most famous such 'collection' is the so-called Fish Disks. Fred Fish lives in California, and as a hobby collates and distributes PD software disks. There are now about 140 disks, and new ones are released each month.

The next best known PD library is the Amicus collection, based on software by the American 'Amazing Computing' magazine, which runs to about 30 disks. Other American operations are the FAUG library of 50 disks, PaNorAmA with 60 disks, APDC and Slipped Disk with 40 disks. There's also a German outfit called AUGE with 15 or so disks.

Don't be fooled into thinking that every disk is different though; most of the best software is in all the libraries, just spread out in a different order. The FAUG collection is a bit different though – it has a lot of demos of games and commercial software like desktop publishers, so if you're thinking of buying a major package it might be worth seeing if you can get a try-before-you-buy demo from FAUG.

The PDers toolkit

By now, you'll have got the idea that there's an awful lot of PD software out there. Between the different suppliers in the UK there must be getting on for 300 different disks – even at a bargain £3 each no-one's going to blow a grand to get the lot. So how do you choose a few really useful ones?

The PD companies often have their own compilations of the most useful stuff, and may offer a starter pack of five disks or so. Fred Fish has

FIRST ENCOUNTERS

By and large, Amiga PD software on any of the main library collections is well tested and includes a documentation file on the disk. Even so, if you've never used the CLI (the command line rather than the WIMP interface) you may well find things confusing.

One of the problems with the Amiga's Workbench system is that unless a programmer takes the time and trouble to draw an icon for a file, that file cannot be seen from the Workbench window. (By contrast, on the ST every file shows up on its GEM Desktop). Many PD programs haven't been 'Workbench-ised' because the author is assuming you can use the CLI and don't need to be hand-held with icons.

If you're lucky, there will be icons there: when you boot your machine up and put the PD disk in you might see a set of drawers, each with an icon in it and a Readme icon you can click for instructions.

More likely though, is a blank window in the Workbench. This means the files are all CLI files and have no icons. To run these files, open up a CLI window (by clicking on the CLI icon in the System drawer of your Workbench disk) and type DIR [Return] to see something like:

```
Ferret (Dir)
Vole (Dir)
Stoat (Dir)
Readme
...
```

Most likely, each utility on the disk is in a directory of its own, and there's a Readme file at the top level to direct you to what's where. To read the Readme file (assuming it actually is called 'Readme') type:

```
TYPE README [Return]
```

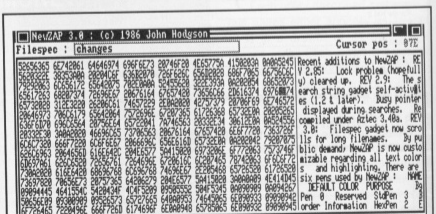
To pause the display press the space bar, to continue press the backspace key. To get a printed copy use the command

```
COPY README TO PRT: [Return]
```

To actually run the software, first you'll need to move to the directory which holds it.

```
CD FERRET [Return]
```

takes you into the Ferret directory, where you can type `DIR` again to see what's there. You should see another Readme file which will tell you exactly how to run the program or programs in that drawer. Any filenames that have spaces in them need to be enclosed by double quotes. For example, if a file is called Read Me instead of Readme, you would need to use the command `TYPE "READ ME"`.



■ *Working through a file's bowels with NewZap (Fish disk 58)*

compiled his favourite selections onto three 'GoldFish' Disks (ho, ho) – these make a good base for any PD collection.

Here are some get-you-going choices from the Fish library – the disk number to ask for is given in brackets:

Recommended for Workbench users

These programs all have icons to be clicked on and are easily used without any knowledge of the CLI. Generally these are fun demos and games, rather than deadly serious applications:

Amoeboids (Disk 120)
A truly excellent version of Space Invaders; you could almost believe the screen had authentic plastic strips over it!

Art files (Disks 45, 72)
These two disks have plenty of saved pictures in all resolutions for you to load into Deluxe Paint or any art package and play with. They can also be used with the slide viewer on this month's cover disk.

Juggler (Disk 97)
The classic juggling-balls Amiga demonstration – you've all seen it, but it's still brilliant.

Life 3D (Disk 70)
A novel variation on the old theme of the cell-generation game. Watch pretty patterns mutate and tell your friends it's a deeply intellectual mathematical exercise.

WBLander (Disk 114)
A cute Workbench 'hack' – just click on it and watch the digitised sound and pictures.

VirusX (Disk 137)
If you missed it on last month's cover disk, this is the best Virus exterminator there is. Hangs around in the background checking all disks as you use them.

Asteroids (Disk 122)
Slightly peculiar version of the classic game – uses an 'interlace' screen so it flickers. But great sound effects, fluid animation, and an 'alarming' (but harmless) aftertaste!

IFF2Pcs (Disk 136)
A neat program which takes a picture file you specify (standard Deluxe Paint/IFF type) and fragments it into a random jigsaw for you to reassemble. Three levels of difficulty.

Recommended for CLI users

These programs assume you understand how to navigate your way around the CLI, and do a little hard work to adapt them to your needs. These are more in the line of tools for programmers than frivolities:

Snapshot (Disk 73)
At the press of [Ctrl] and [Esc] you can save the currently active screen as an IFF file on disk. Coupled with a slide viewer program, this is great for making up a series of instructional screens to illustrate something.

VT100 (Disk 138)
A very full-featured terminal emulator, with Kermit, Xmodem and ASCII send/receive. It's even got a command language for sending files in batches. Hasn't got Viewdata emulation (for Micronet), but would be fine for using with Microlink, Telecom Gold or any UK Bulletin Board.

ConMan (Disk 133)
A utility which gives you an enhanced CLI system – the best thing is the ability to call back your last few command lines if you make typing mistakes.

mCAD (Disk 59)
A nice structured drawing package – ideal for simple CAD applications, but runs in interlace mode (flickers a lot!). It's object-based rather than a pixel painting package, which means that shapes are easily moved and resized.

Xicon (Disk 102)
Gives you the ability to run CLI command files from a Workbench-clickable icon. This means you can run any program or sequence of programs from the Workbench; there's also a neat text-display window for showing Readme files.

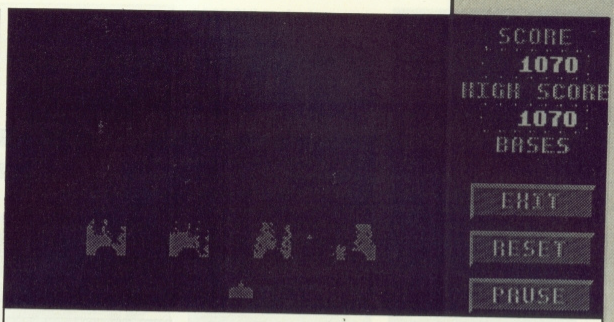
Newzap (Disk 58)
A file editor, to change any byte in any file. Apart from serious hacking, this can be fun for being really silly and hacking the error messages in a program.

Diskzap (Disk 50)
A disk sector editor. As with Newzap above, this is only for real hackers, as incautious use can damage your disks and health. Has one or two bugs, but is generally pretty useful.

DPSlide (Disk 11)
A sophisticated slide viewing program – you create a script of which programs to show in which order; you can fade from one to the next, show text files and set different display times for each one.

ASM68K (Disk 81)
A pretty good 68000 assembler system.

Arc (Disk 70)
A file compression utility – this is virtually the standard in America for squeezing files to send over comms links, or just generally archiving material to save disk space. This one's shareware.



■ *'Amoeboids' – the great little Space Invaders game from Fish disk 120*

■ *The ubiquitous icon for all Fish disks*

THE SUPPLIERS

In the UK, the following companies that we know of supply Amiga PD software:

GEORGE THOMPSON ASSOCIATES, Freepost, Dippen, Brodick, Scotland KA27 8BR (077 082 234). Fish (inc. GoldFish), Amicus, FAUG libraries. £3.00 each.

THE AMIGA PD LIBRARY, 140 Rushdale Road, Sheffield S8 9QE (0742 588429). Fish, Amicus, FAUG, Slipped Disk, Panorama and own selection disks. £3.00 each.

SOFTVILLE, 55 Highfield Avenue, Waterlooville, Hants PO7 7PY (0705 266509). Fish, Amicus, APDC and own selection disks. £3.00 each.

SHARE AND ENJOY

Some material on PD disks is in the slightly different category of 'Shareware'. This is freely distributable, but if you copy a shareware program from somewhere and, after trying it out, decide to keep and use it, you are asked to send a donation to the author (usually £10-£25). This usually buys you the latest bug-fixed version and a manual. In practice, the shareware concept doesn't always work; particularly in the UK it's just too much trouble to send $25 over the Atlantic.

GAME BUSTERS

If the bad guys cause suffering and you want 'em beat. If you need more lives and ya wanna cheat. Where ya gonna go? Gamebusters! All the facts you need to get further in your game playing.

OBLITERATOR ■ *Amiga*

When you walk through the entrance, keep the left mouse button clicked and continuously move the mouse up and down. Drak should then keep walking towards you, which is in a downward direction. This allows you to walk through space and go down to the next level avoiding any aliens. This often gets you out of tricky situations. Do not let go of the mouse button unless you are near the floor of the level.

R Ackroyd
Bradford, Yorkshire

ENDURO RACER ■ *ST*

When the timer has counted down type CHEAT followed by any of these keys:

S to skip a level
F for turbo speed
T for extra time

Stuart Green
Aughton, Nr Ormskirk.

THE THREE STOOGES ■ *Amiga*

When you are on the 'Doctors Wanted' stage, drive your buggies at the same speed as the male nurse pushing the patient. keep a fraction behind them; this enables you to accumulate a high score without any danger of collision. During the 'Slapping' game, tweaking Curly's ear gives the best result as he rarely ducks out of the way.

R Ackroyd
Bradford, Yorkshire

ECO ■ *ST*

During the game, a stab of [Ctrl]S sends you to the game design screen. Another gene will automatically be unlocked.

Michael Brown
Charlton-cum-Hardy, Manchester

JINXTER ■ *ST and Amiga*

Here's part of the solution to Rainbird's Jinxter (other half next issue): To get past the bull show it the tablecloth. You lose luck so go south from the grassy field, wear gloves, hold wire with gloves and cut it with the secateurs.

The Walrus charm can be found by going to Xam's back garden; you will hear a knock at the door. Go out and get note out of the postbox. Go to study, dial number and exit. When you get the cheese, melt the plastic key twice and go out. Unlock the postbox with plastic key and get charm out of the parcel.

To catch the mouse get the trap out of the shed and take it to Xam's house. Get candle and matchbox, get match, go to kitchen, open door, strike match and light candle with it. Get cheese, blow out candle, put the cheese on the trap and set it. Drop the trap, go down and wait. Go up and get mouse.

Stuart Green
Aughton, Nr Ormskirk.

GNOME RANGER ■ *Amiga*

There's an odd bug that rears its head when you are in the shop: give Cap any two objects that you are holding and then take the backpack. Type 'PUT (any object in the shop) IN BACKPACK'. Now do the same for any other object in the shop; you will find you will be able to get every object in Cap's shop.

After making friends with the eagle, ring the bell and ask the eagle to go into the witch's garden, get the peg, and then open the kennel door. Now go into the garden and follow the dog. You will then find something to your advantage.

Dean Elcome
Barton Le Clay, Bedford

FAERY TALE ADVENTURE ■ *Amiga*

Go northwest from your home village of Tambry. You will three snake type creatures at the water's edge. Kill them and you will be rewarded with a turtle (he will give you a shell and then ask if you would like a lift on his back). The shell is for calling the turtle if you cannot see him.

Objects and their uses:
Orbs let you see hidden doors.
Blue stones can teleport you when standing in a ring of stones.
Glass vials restore you vitality.
Green jewels let you see better at night.
Bird totems give you a birds eye view of where you are.
Magic Rings freeze attacking nasties.
Jade skulls act like 'smart' bombs

Dean Elcome
Barton Le Clay, Bedford

GAUNTLET II ■ *ST*

Find two keys and then hunt for a locked treasure chest. Press the [Help] key at the same time as you open the chest. Do a similar stunt, but this time hold down the [Insert] key. You'll be granted a whole heap of health. This works repeatedly and on any level.

Kevin Mangan
Kelvinside, Glasgow

KARATE KID II ■ *ST*

Press 'P' to advance a stage.

Michael Brown
Charlton-cum-Hardy, Manchester

RETURN TO GENESIS ■ *ST*

When the game has loaded type 'WASP.ASM', this activates the cheat mode and gives you the following extra functions:

F5 – makes your ship indestructable.
F4 – changes monitor frequency.
Control – displays program version message.

The only way to end the game once you have clocked up a high score is to select the scientist Festus and destroy your ship by pressing the space bar.

Michael Brown
Charlton-cum-Hardy, Manchester

STAR WARS ■ *ST*

Infinite shields for Domark's computer version of the classic film. Simply type the listing into ST BASIC, insert a blank (freshly formatted) disk and run the program. An AUTO folder will save to the new disk. Make sure it's the blank disk you insert and NOT the original game disk. Press the reset buttom with the blank disk in the drive. The drive will wirr for a while and then stop. Insert the Star Wars game disk and press any key.

There are two versions of ST BASIC. One written in 1985 and the other in 1987. The later version doesn't support the DEG SEG command in line 200. If you have the later version then remove this line. To check for your version simply click on ' About ST BASIC' from the Desk menu. The copyright message will display the date.

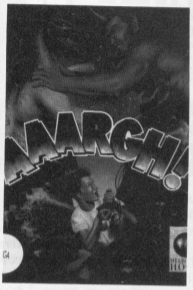
```
160 ' STAR WARS
170 ' infinite shields
180 ' by D Sanger
190 p=&h7fd00:size=128
200 def seg=0 : rem ONLY FOR OLD BASIC
210 for a=0 to size-1 step 2
220 read b$:poke p+a,val("&H"+b$)
230 next a
240 bsave "auto\stwarcht.prg",p,size
250 rem
260 data 601A,0000,0064,0000,0000,0000,0000,0000
270 data 0000,0000,0000,0000,0000,0000,4FF8,4000
280 data 4878,0200,487A,FEF6,4267,3F3C,004A,4E41
290 data 3F3C,0007,4E41,4267,487A,0030,3F3C,004E
300 data 4E41,42A7,42A7,487A,0026,2F3C,004B,0003
310 data 4E41,2E40,323C,4E71,204F,D1FC,0000,A7B2
320 data 30C1,30C1,2F00,4EEF,0104,2A2E,2A00,6175
330 data 746F,5C73,7461,7277,6172,732E,7072,6700
```

D Sanger
Southall

AAARGH! ■ *Amiga*

Don't breath fire or jump when fighting for the egg on the bonus level: just keep punching, you'll never lose that way.

R Ackroyd
Bradford, Yorkshire



DEFENDER OF THE CROWN ■ *Amiga*

Hold down the [K] key until the game has loaded. This neat trick provides you with 1024 knights in your home army and a further 1024 in your campaign army. Your sword fighting will also greatly improve; opponents can usually be dispensed with by the second slice of the blade.

Rahim Chitalya
Hornsey, London

BONECRUNCHER ■ *Amiga*

Here are some passwords that might help:

Golemstench
Scarab
Web of Death
Underground
Deathchamber
Golems Cave
Hornslut
Slimehole
Bloodsmell
Bonepowder
Nightmare
Monsterbreed
Thunderstorm
Creepy Cave
Liquidation
Megahaze
Strata Gem

Dean Elcome
Barton Le Clay, Bedford

This month's winners:

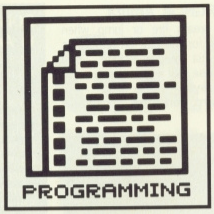
R Ackroyd for his tips on Obliterator, AAARGH! and the Three Stooges. He wins the best of the Amiga titles reviewed in this issue.

Stuart Green for the solution to Jinxter (half of which is printed this month; the final installment next issue) and his tips on Enduro Racer. He scoops the cream of the ST titles reviewed this issue.

GAIN A GAGGLE OF GAMES

Tips, pokes and game-busting ploys. Yes. We want the lot. If you've discovered a secret password, written a poke, mapped a game, completed an adventure, found out ways of getting high scores or know of any method that lets you win (by foul means preferably) then send us details. By doing so you could win a collection of the best new games for your machine, ST or Amiga.

Interested? Well stop gawping. Get your game busters to us. Send them to Gamebusters, ST/Amiga Format, 4 Queen Street, Bath, BA1 1EJ. Please state whether tips are for ST or Amiga. Try and make tips short and snappy – we want to know how to complete a game, not a tome on house-training armadillos (I have the three-volume edition of J. Buttocks 1914 treatise, The Dry Armadillo, already - Ed). Pokes can be any length as they will be included on the cover disk rather than printed. If a poke is very long please send on a 3.5" disk, and also enclose a jiffy bag and return postage if you want it back.

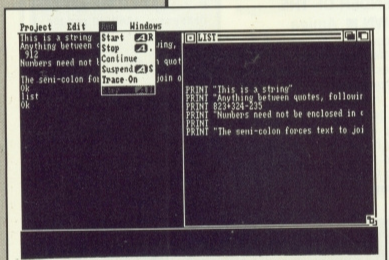


LEARN BASIC

Does BASIC baffle you? Do you want to learn the lingo? Have you the stamina to start? For more alliterations and more on BASIC let Richard Monteiro do the talking.

For all the pressures of more modern and sophisticated computer languages, BASIC continues to be the most popular and widely used of any in the world. One criticism which is always levelled against it, however, is that there are so many dialects that no two versions are remotely compatible. This isn't quite the case, however. The fact is, Amiga BASIC and HiSoft's Power BASIC (trial version supplied on this month's cover disk) share enough syntax to make this guide-to-BASIC quite feasable. Both versions are based on Microsoft BASIC; Amiga BASIC was actually written by Microsoft and Power BASIC, which takes its roots from ST BASIC, directly compiles Microsoft's PC QuickBASIC.

If you're after tips on accessing the kernal ROM or GEM VDI, you're reading the wrong pages. This article assumes you're a complete beginner. Any listings or commands printed througout this series will work with either Amiga BASIC or Power BASIC (the version supplied on this month's cover disk or the fully-blown version available from HiSoft). Boxes elsewhere on these pages describe the finer details of writing and excuting programs.



■ *LIST and BASIC windows can be selected either by placing the pointer inside the appropriate window and clicking or by selecting Windows from the menu bar.*

AMIGA BASIC: GETTING GOING

If you've never used Amiga BASIC before, here's what you do. Reset the computer and insert your Workbench disk into a drive. Once the Workbench has loaded, replace the Workbench disk with the Amiga Extras or Amiga BASIC disk. An Extras disk icon appears. Double click on this icon and the contents of the disk eventually appears. Double click on the AmigaBASIC icon.

Amiga BASIC is now ready to use. Type the following two lines exactly as you see them:

```
INPUT "Please enter your name";a$
PRINT "As you can see, ";a$;", a program."
```

Make sure you type exactly what's printed above; take care with punctuation and spacing. Press [Return] at the end of each line.

Move the pointer (arrow) so that it rests inside the window titled BASIC and click the left mouse button. A thin cursor appears; type RUN [Return] (the large key embossed with a large angled arrow). The two-line program runs and you're asked to enter your name – do so. When the program has finished you're left with a large BASIC window. To get back to the editor (known as the LIST window), type LIST and press [Return].

That's the procedure for creating and running BASIC programs. Now follow the rest of the series to discover what the commands do and how you can use them within your own programs.

Print and be damned

Whenever you use a piece of software – be it a game, word processor or programming language – you generally find your way around by following on-screen prompts or messages. These messages usually ask you to press certain keys or type in phrases. The computer can then decide how to interpret what you've written. This is also how BASIC works.

Two commands understood by nearly all versions of BASIC are PRINT and INPUT. PRINT tells the micro to display words or numbers on the screen at your command. INPUT is used to pause execution of a program to allow who ever's using it to enter text or a value. Read through whichever panel refers to your micro and follow the instructions to enter and run the simple two line program described there. This is an example of what you can do with simple program instructions in BASIC. Let's take them step by step. First clear the program you've just run. Select the New option from the File menu in Power BASIC or type NEW in the BASIC window in AmigaBASIC.

Now type:

```
PRINT "A" [Return]
```

Note that the word 'Return' inside the square brackets, and the brackets themselves, aren't meant to be typed in. They are instructions intended for you. Hence [Return] means press the key marked Return (or with an angled arrow) after keying in the line.

Run the program as you did the previous one. A capitol 'A' is displayed towards the top-left of your screen. Replace the 'A' with other characters: 5, &, _, ?, H and so on, and rerun the program. Don't be frightened to experiment – you can't do yourself or the computer any harm. Note that the speech marks aren't printed; only what's held between them. Words and phrases of this kind are known as 'strings' (think of them as strings of characters). If you try printing a letter without putting speech marks round it, you get an unexpected result. Try it and then read the panel on variables to find out what happened.

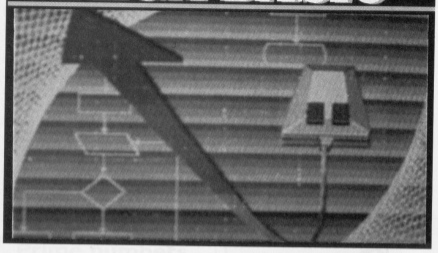
Here are a few example strings:

```
PRINT "ABCDEFGHI"

PRINT "1234"

PRINT "HELLO THERE"
```

Character building

Any character you can type from the keyboard can be sent to the screen using the PRINT command. However, not all can be conveniently typed in a PRINT command between speech marks. The obvious examples are the speech mark (double quote) characters themselves. The double quote symbol, and indeed any other character, can easily be printed, however, if its ASCII value is known. ASCII (the American Standard Code for Inforamtion Interchange) is a standard code for handling letters and numbers within a computer. The standard part starts at 0 and ends at 127 and codes from zero to 31 are used for

AMIGA BASIC



special characters which control things like screen colour and cursor position – forget about these for the moment. 32 is the first alphanumeric character code; it represents a space. Next is 33 which represents the exclamation mark, and code 34 is the one we are interested in as it signifies the double quote.

To print characters using their ASCII codes you must use a new command, CHR$ (meaning 'The CHaRacter whose value is). For instance,

```
PRINT CHR$(34)
```

If you run that line, a quote mark will appear on screen. The number in brackets refers to an ASCII code. Experiment with other codes. If you're interested, both Amiga and ST BASIC instruction manuals contain an appendix with a list of ASCII codes and relevant characters: appendix A and E repectively.

Things to do with strings

With computers being used more and more for manipulating text rather than numbers, it's perhaps not surprising that BASIC provides a regular cats cradle of different ways of fiddling with strings. As well as the CHR$ function, there are all manner of others for reproducing strings, splitting them and putting them back together again.

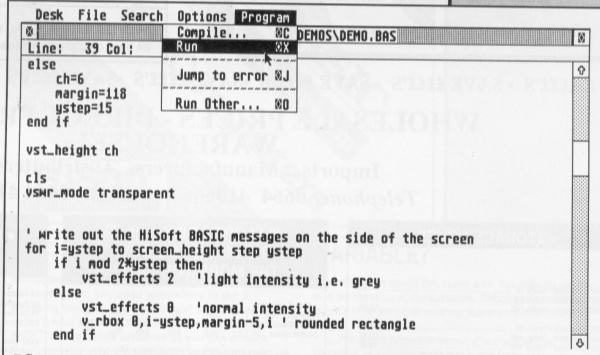
If you want to extract one or more characters from any point in an existing string, all you need is a touch of MID$. It's use is easiest to explain with an example. Suppose you want to extract the word 'MAD' from the word 'ARMADILLO', to describe the obsession some journalists have for this lovable little South American creature. the command would be `MID$("ARMADILLO",3,3)`. The string ARMADILLO has to be in speech marks, though you could use a string variable in its place (see the panel on variables to find out what they are and how to use them). The two numbers following it, which are separated from it and each other by commas, tell BASIC where the extraction should start (in this case the third character from the left) and how many characters to take (3: M, A and D). MID$ *copies* the characters, usually to a string variable, leaving the original string untouched. If you wanted to assign MAD to the variable JOURNALIST$, the full command would be `JOURNALIST$=MID$("ARMADILLO",3,3)`.

There are two commands associated to MAD$, which are in effect special cases of it. `LEFT$("TAPIR",3)` would return the string TAP. As the command name suggests, LEFT$ copies a specified number of characters from another string, starting from the left. The number in brackets determines how many. Similarly `RIGHT$("PLATYPUS",3)` would return PUS, by copying the last three characters in PLATYPUS. The function starts counting from the right (bet that was a surprise!) but the extract still reads from left to right.

`LOADSADOLLARS$ = STRING$("$",17)` builds a string consisting of 17 dollar symbols. If you need to repeat any character (and this could include graphics characters), STRING$ does just that. Put the character (which again may be the con-

ST BASIC TOO

Users of Atari's bundled ST BASIC will feel at home with HiSoft's Power BASIC: the commands are identical. This tutorial, therefore, applies to BASICs Amiga, Power and ST. Alright, if you want to be pernickety about it, Personal and QuickBASIC users can also use this tutorial. ST BASIC requires line numbers – Amiga BASIC and Power BASIC don't – so if you're going to follow this article with ST BASIC in mind, do remember to include line numbers at the start of each line.



■ *Program creation is easy from Power BASIC: position the cursor anywhere in the window and type then choose RUN from the Program menu to execute it.*

POWER BASIC: GETTING GOING

Start from the Desktop, displaying either the files on this month's cover disk (a copy of it, of course!), or a copy of the HiSoft master disk if you have the full version. If you're using the cover disk version, double click on the CLICK_ME.PRG file icon and select the appropriate item from the menu (see DISK EXTRA pages for further information). For the full version double click on the PBASIC.PRG file icon. Power BASIC loads and a flashing square (the cursor) appears after a few seconds. You're ready to roll.

Try typing the following. Don't worry if it doesn't make sense yet, the tutorial will put that right:

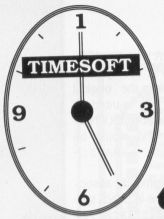
```
INPUT "Please enter your name";a$
PRINT "As you can see, ";a$;", a program."
```

Make sure you type exactly what's printed above; take care with punctuation and spacing. Press [Return] at the end of each line.

Move the pointer to the Program option in the menu bar and, after the menu drops down, click on Run. After a few seconds the two-line program runs and you're asked to type your name. Do so, remembering to press [Return] at the end. When the program's finished BASIC tells you and invites a keypress. Press any key to return to the editor (where you previously typed in the program).

That's the procedure for creating and running BASIC programs. Now follow the rest of the series to discover what the commands do and how you can use them within your own programs.

VISA



time soft

85 London Road • Tooting •
London • SW17 9JR

01-685 9849

AMIGAS

Amiga A500 + Deluxe Paint + Times Two Software
£329.00 + VAT

Amiga A500 + 1084 colour monitor + Deluxe Paint +
Times Two Software £549.00 + VAT

Amiga A500 Business Pack P.O.A

Commodore 64's from £50.00

Introducing PROTEXT for the ST and Amiga

Arnor's acclaimed WORD PROCESSOR has now been implemented for the Amiga and ST computers. These are not cheap conversions but individually crafted programs designed to take full advantage of these powerful 16 bit machines.

ST User described Protext as:

"Probably the most powerful word processor on the Atari ST and quite likely to become the best selling too"...

..."Every feature you could possibly want is here - word processing, Ascii text editing, mail merging and so on"

Look out for the reviews in ST/Amiga Format and ST World, or send an s.a.e. for further information.

The ST version is available NOW for all models at a price of £79.95. The Amiga version will be released very soon. Watch this space.

Releasing your micro's potential... ARNOR

Arnor Ltd, Protext House, Wainman Road, Peterborough PE2 0BU.
24 hour credit card hotline. Access/Visa. (0733) 239011.

• SAVE ££££'S • SAVE ££££'S • SAVE ££££'S •SAVE ££££'S •SAVE ££££'S • SAVE ££££'S • SAVE £££ •

WHOLESALE PRICES - DIRECT FROM THE WAREHOUSE!

Imports... Manufacturers... Distributers...

***Telephone:* 0664 410666** ***Fax:* 0664 410 221**

• STORAGE BOXES •

3.50" Lockable - Holds 40	£4.95
3.50" Lockable - Holds 80	£6.95
3.50" Lockable - Holds 120	£8.95
5.25" Lockable - Holds 50	£4.95
5.25" Lockable - Holds 100	£6.97
5.25" Lockable - Holds 140	£8.97

ALL WITH LOCK & TWO KEYS DIVIDERS & ANTISTATIC!

• ACCESSORIES •

Mouse Mat	£4.95
BBC Printer Cable	£5.95
Atari etc Printer Cable	£5.95
3.5" Cleaning Kit (fluid)	£4.95
5.25" Cleaning Kit (fluid)	£3.95
Disk Notcher (doubler)	£4.95
12" Monitor Stand	£11.95
14" Monitor Stand	£14.95
Desk Top Copy Holder A4	£14.95
Desk Top Copy Holder A3	£14.95
Space Saver Printer Stand (80 Col)	£24.95
Economy Printer Stand (80 col)	£13.95

!!! FLOPPY DISKounts !!! THE MORE YOU BUY - THE MORE YOU SAVE !!!

3.5" Bulk Packed - Price each disk	25+	50+	75+	100+	150+
Single Sided 135 T.P.I	84p	82p	80p	78p	76p
Double Sided 135 T.P.I	86p	84p	82p	80p	78p

ALL DISCS ARE SUPPLIED WITH LABELS AND ARE CERTIFIED 100% ERROR FREE

5.25" Bulk Packed - Price each disk	25+	50+	75+	100+	150+
Single Sided 48 T.P.I	42p	37p	32p	30p	29p
Double Sided 48 T.P.I	44p	39p	34p	32p	31p
Double Sided 96 T.P.I	46p	41p	36p	34p	33p
Double Sided Col. 96 T.P.I	55p	49p	45p	39p	38p
Double Sided Rev. 96 T.P.I	55p	49p	45p	39p	38p

COLOURED DISKS, COME IN FIVE COLOURS (RED, BLUE, WHITE, YELLOW, GREEN)

REVERSIBLE DISKS HAVE TWO INDEX HOLES AND TWO NOTCHES!

ALL DISKS COME WITH ENVELOPE AND LABEL SET AND HAVE A HUB RING AND FULL GUARANTEE

• BULK PACKED OFFERS • BEST VALUE IN TOWN

25 Double Sided 5.25" 96T.P.I Disks with our storage box	£11.99
50 Double Sided 5.25" 96 T.P.I Disks with our storage box	£17.49
75 Double Sided 5.25" 96T.P.I Disks with our storage box	£22.99
100 Double Sided 5.25" 96T.P.I disks with our storage box	£28.99

YOU CAN CHOOSE EITHER 50 CAPACITY STORAGE BOXX OR 100 CAPACITY STORAGE BOX TO GO WITH YOUR DISCS. IF YOU WANT A 140 CAPACITY STORAGE BOX JUST ADD A FURTHER £2.95

20 Double Sided 3.5" 135T.P.I Disks with our storage box	£19.95
40 Double Sided 3.5" 135T.P.I Disks with our storage box	£36.95
60 Double Sided 3.5" 135T.P.I Disks with our storage box	£49.95
80 Double Sided 3.5" 135T.P.I Disks with our storage box	£64.95

YOU CAN CHOOSE EITHER 40 CAPACITY STORAGE BOX OR 80 CAPACITY STORAGE BOX TO GO WITH YOUR DISCS. IF YOU WANT A 120 CAPACITY STORAGE BOX JUST ADD A FURTHER £2.95

ALL BOXES COME WITH A LOCK, 2 KEYS, DIVIDERS AND ARE ANTISTATIC

ALL DISKS COME WITH LABELS AND ARE 100% GUARANTEED ERROR FREE

ALL DISKS ARE SENT BY TRACKBACK OR COURIER SERVICE AT NO EXTRA COST!

• MELTON COMPUTER SUPPLIES •

PO Box 2, Melton Mowbray, Leicestershire. LE13 1Y9
Tel: 0664 410666 (24hrs) FAX: 0664 410 221

SONY MF2DD £19.95

VISA

Phone for our best price before placing your order

EDUCATIONAL & GOVERNMENT ORDERS WELCOME

Remember the price you see is all you pay (UK only). Prices include VAT and carriage

•SAVE ££££'S •SAVE ££££'S • SAVE ££££'S • SAVE ££££'S •SAVE ££££'S •SAVE ££££

tents of a string variable) and the number of repetitions inside the brackets and away you go. You could do this with the space character as well, but there's a custom-made function in BASIC for this. `BLANK$=SPACE$(32)` defines a string variable BLANK$ containing 32 spaces. Useful for blanking areas of the screen.

One last function which is particularly useful when trying to match text input by the user of the program with other text, perhaps held in a variable, is UCASE$. The function converts any lower case letters to upper case so producing POSTMAN PAT from Postman Pat, FAHRENHEIT 451 from Fahrenheit 451 and 101 DALMATIANS! from 101 Dalmatians! As with all the other string functions, you enclose the string in brackets and speech marks.

Prime numbers

Computers are great for solving arithmetic problems (Hence the term 'Computer'!, Ed), but they use slightly different notation for some of their symbols. + and – are still used for addition and subtraction, but BASIC uses * for multiply and / for division:

```
PRINT 8*45
PRINT 1524/3
PRINT 23+67-18
```

Like numbers, strings can be added together. For instance, if you have the two strings "SUN" and "DAY", You could combine the two with the expression:

```
PRINT "SUN"+"DAY"
```

or `PRINT "SUN";"DAY"`

or even with the two-line routine:

```
PRINT "SUN"; <return>
PRINT "DAY" <return>
```

By now you should have realised that the semi-colon's function is a little more specialised. It ensures that the next item printed appears directly after the previous one.

Case for input

You've now discovered how to make the computer display characters on the screen, but you can also pursuade a program to wait for information from the user.

The INPUT command is usually followed by two parameters, a prompt string and the name of a variable (either string or numeric). When an INPUT statement is encountered, the program prints a question mark to indicate that it's waiting for data. Any prompt string is printed before the question mark:

```
INPUT "Please enter you name?";a$
```

Running the line above causes the message 'Please enter your name?' to appear. The computer will hold that display until you type something in and press [Return] (you don't actually have to enter anything; [Return on its own will do). The 'a$' following the semi-colon is a string variable. Variables are discussed in one of the panels, but for now accept that a$ will hold your input. To test this add a second line to the above:

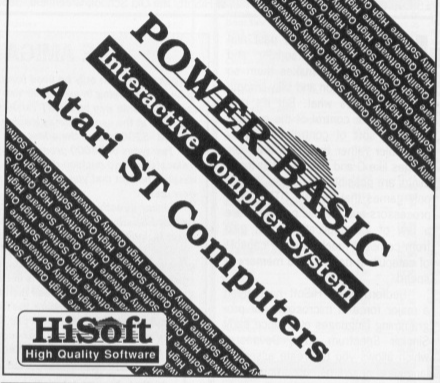
```
PRINT a$
```

Numeric INPUTs work in much the same way as string INPUTs; the difference being that a numeric INPUT only accepts numbers. Attempts at entering anything else will result in an error message. Run the program below and try entering a number. Run it again and use a word instead.

```
INPUT "Please enter age";age <return>
PRINT age <return>
```

A comma can be used in place of the semi-colon to supress the question mark. For example, the statement INPUT "Enter a string, any string ",a$ will print the prompt with no question mark. There's no restriction to the number of variables following a string prompt: INPUT "Enter day and date";dy,dt and INPUT "Names";a$,b$,c$ are permissible. Responding to INPUT with too many or too few items will cause an error.

Next month we'll be looking at branches and loops, in fact whole shrubberies of new BASIC constructions.



WHAT'S IN A VARIABLE?

When you want to retain a string or a value within a basic program, you need somewhere to put it. Realising this fact, the inventors of the language provided a host of handy little boxes for just this purpose. They're called variables as you can change their contents at any stage. Once you've entered something into a variable, though it will stay there until you specifically change it, or the program finishes. Variables are addressed by name (like having a label on the box) and come in two types: numeric and string. A numeric variable can only be filled with a number. A string variable can only be assigned a character string. All obvious stuff. Variables can be given values at any point in a program.

Typical examples are:

```
LET a=123
LET a$="A"
animal$="armadillo"
time=6.45
```

Notice that some expressions start with LET; the LET command is obsolete these days but it may help you to imagine it preceeding assignment statements. Amiga BASIC variable names may be anything up to 40 characters in length. The names are not case-sensitive which, put simply, means variables like lives, Lives and LIVES are treated as the same thing. Characters allowed in a variable name include letters, numbers and decimal points. Power BASIC variables are treated in much the same way, but with no restriction on the size of their names. Although in reality, there's little sense in making them uncomfortably long.

The short program below gives some idea of the potential of variables:

```
firstname$="Agnes"
surname$="Armadillo"
address$="Future Publishing Armadillary, 4
Queen St, Bath"
county$="AVON"
postcode$="BA1 1EJ"
telephone$="0225 446034"
PRINT firstname$;" ";surname$
PRINT address$;", ";county$", ";postcode$
PRINT telephone$
```

See if you can work out what the program below does. It's using a FOR NEXT loop; something you'll be introduced next time. For now just gaze in awe at the power of PRINT, variables and loops:

```
a$="ASCII "
FOR T=32 TO 127
PRINT a$;"code: ";T;a$;"character:
";CHR$(T)
NEXT T
```

STRING SIZE

Big may be beautiful, but Amiga BASIC and Power BASIC take this concept a byte too far. Amiga BASIC strings can be anything up to 32k in size; that's 32768 characters (room enough for all the text in this part of LEARN BASIC) With Power BASIC we really are talking silly numbers: 16,777,215 characters is the maximum you'll be able to fit in a string. In data terms, that's the equivalent of 32 packed issues of ST/Amiga Format. That's all very well, but you'd never fit the string in memory or even on a 15Meg hard disk

REVIEW

DEVPAC

For any machine code programming, a reliable assembler, disassembler and monitor is essential. Richard Monteiro assembles the facts on HiSoft's new offerings for ST and Amiga.

£59.95 ■ ST (v2.0) and Amiga (v1.2) ■ HiSoft, The Old School, Greenfield, Bedford, MK45 5DE (0525 718181)

REFERENCE GUIDES

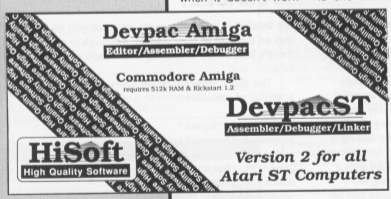
Want to take the plunge and learn 68000 assembler? Glentop's First Steps in 68000 Assembly Language (ISBN 1-85181-081-1) could prove just what you're looking for.

There are several guides for the Amiga, available from Addison Wesley, which are necessary for heavy duty programming: Intuition Reference Manual, Rom Kernel Reference Manual, Hardware Reference Manual. Unfortunately each costs around £30.

On the ST side, the Concise Atari ST 68000 Programmer's Reference Guide (ISBN 1-85181-172-9) from Glentop and the Anatomy of the Atari ST (ISBN 0-948015-56X) published by 1st Publishing at £12.95 are recommended.

Look at top games, past and present, like Starglider and Virus – what makes them so special? Rapid action and silky-smooth animation, that's what. But it's only with complete control of the computer – the sort of control offered by Assembler rather than high level languages like C and Pascal – that these things are possible. Of course, it's not only games that benefit; DTPs, word processors and graphic packages are a few of the applications that gain from compact machine code capable of catapulting data around memory at speed.

Bedford-based HiSoft have been a major force in microcomputer programming languages ever since early Sinclair Spectrum days; Devpac – which allows you to create assembly language programs, assemble them to machine-code and debug the code when it doesn't work – is one such program that has mutated through various computer formats. It's available for the Amiga as Version 1.2 and for the ST in recently-completed Version 2 format. If this paragraph makes as much sense as Roy Hattersley on a good day, then you need the *Syntax buster* box.



THE AMIGA DIFFERENCE

Devpac Amiga can only be used from the CLI, but if you're technical enough to be programming in assembler this won't bother you. The editor works in much the same way as the ST version except for preferences, which are specified at the same time as loading the editor. For example, you might use GENAM –S200 to load the editor with a 200k workspace.

Two types of 68000 programming are possible: position-independent (relocatable) and position-dependent. Position-dependent code is possible despite the fact that you never know where your program will load until it executes.

Linker directives allow you to specify the type of program hunk: code, data or BSS which can be sent to either public, fast or chip memory. The linker is, incidentally, the public domain offering BLINK.

Due to the Amiga's multi-tasking capabilities, a monitor is a tricky program to implement; HiSoft have made a reasonable attempt. Once a program (better known as a task) is in memory, the Devpac monitor suspends it. If you wish to single step a task then this is the correct state for the task to be in. Other operations require the task to be executing. Only the loaded task can be investigated by Devpac. Most machine code programs can be hacked without any problem, although system programs pose problems as many of them rely on undocumented registers and memory areas.

Source and code

There are several stages to pass through before ending up with an executable 68000 machine code program. First write the assembler source code in mnemonic form. You can use a text editor to write source programs; any editor or word processor capable of ASCII output will do, although the editor HiSoft provide is the best as it allows you to assemble files in situ.

Along with standard cursor-movement control, HiSoft's editor lets you move to the top or bottom of a file quickly, delete (and undelete) text, search and replace strings, perform block operations (copy, cut, paste, print, save) and – of course – load, save and merge files. Functions are accessible via the keyboard and standard WIMP menus.

Text files are memory resident which makes for fast editing, but does mean that on the ST520 and A500 you can only edit text files of, at most, 300K. Not a lot when you consider that 300K of source can compile to as little as 50K of code. That said, if you are serious about writing a block-busting game or an operating system, it's unlikely you'll use a 1/2 Mbyte machine.

Typical source syntax consists of

IMPROVEMENTS TO ST VERSION 1.2

The most obvious difference between Devpac Version 2 and earlier versions of Devpac ST, and indeed the current version of Devpac Amiga, is that complete program development can take place from one core program: the assembler can assemble direct to memory and the code can be debugged directly or run without the need for any disk accessing.

Subtle editing improvements include faster display speeds, lines up to 240 characters in length, save-preferences option and paste mode.

Assembly is faster, has extended nesting ability (macros as deep as memory permits and IFs to 64,000 deep!) and has extra assembler directives. For instance, REG produces a symbolic register list and OPT can have a wealth of new parameters following it: O optimises your code in case you've used long jumps where short ones would have done; T checks certain types of programming expression; X for extended debugging (which allows symbols of up to 22 significant characters).

The manual has undergone a hefty shakeup; page count is now 200, sections on interfacing to the operating system and creating desktop accessories have been included, and overall it's tidier. But still no glossary or index.

LIGHTSPEED SOFTWARE

31a BROADWEIR, BRISTOL, BS1 3AY
TEL: (0272) 225604

24 HOUR ANSWER PHONE FOR ALL QUERIES
NEW TITLES AVAILABLE FROM DAY OF RELEASE FOR ST AND AMIGA.

ATARI

Barbarian (Psygnosis)	20.00
Blue War	16.50
Bubble Bobble	13.95
CAD 3D	20.00
Captain Blood	16.50
Carrier Command	16.95
Crash Garrett	13.95
Cyber Paint	59.95
Cyber Studio	61.50
Desktop Publisher	99.74
Disector	24.95
Dungeon Master	16.95
Enduro Racer	13.95
Fast Basic (Disc)	32.50
Fast Basic (Rom)	55.00
Flight Simulator II	39.95
Flit Sim II Scenery Disc II	19.00
Flit Sim II Scenery Disc 7	19.00
GFA Basic	30.00
GFA Companion	20.50
Goldrunner II	16.99
Gun ship	16.95
Hisoft Basic	55.00
Home Publisher	16.95
Hunt For Red October	19.00
Impossible Mission II	13.99
Kari Warriors	9.99
Jinxter	18.50
Lurking Horror	25.50
Mach III	13.95
Midi Maze	29.95
Mouse Master	24.95
Oids	13.95
Outrun	13.95
Predator	13.95
Pool	7.75
Power Basic	28.50
Pro Sound Design	42.50
Procpy 1.6	27.50
Pro Light	12.50
Pro Midi	12.50
Powerplay	16.50
Quantam Paint	13.95
Rampage	9.99
Rolling Thunder	13.95
Screwballs	13.95
Seconds Out	13.95
Slap Fight	13.95
ST Wars	16.95
ST Replay	58.50
Stone Braker	8.50
Superbase Personal	69.95
Suerbase Professional	219.95
Tau Ceti	8.50
Terramex	16.50
The Pawn	19.00
U.M.S	16.95
UPS	16.95
Word Writer	61.50
Xenon	13.99
Mouse Mat (Soft)	3.99
Mouse Mat (Hard)	5.75
Hard Covers 520 STFM or1040	15.99
Joystick/Mouse extender lead	4.75
E180 Video Tape	3.25

All prices are inclusive of VAT and delivery inside the UK.
Please make cheques, P/O payable to
"Lightspeed Software"
all orders despatched within 24 hours, please allow 7 days

ST & AMIGA INDEPENDENT BUYERS CLUB

ALL SOFTWARE AND HARDWARE DISCOUNTED
Send SAE for full information/prices and offers to club members.

Aargh	Amiga ST	16.89	Carrier Command	Amiga ST	15.85
Barbarian	Amiga ST	15.85	Gold Runner 2	Amiga ST	16.40
Blacklamp	Amiga ST	12.85	Jewels of Darkness	Amiga ST	13.97
Captain Blood	Amiga ST	29.85	Obliterator	Amiga ST	16.40
Flight Simulator	Amiga ST	29.85	Sidewinder	Amiga ST	13.97
Guild of Thieves	Amiga ST	16.40	Starglider	Amiga ST	16.40
Legend of the Sword	Amiga ST	16.85	Xenon	Amiga ST	13.40
Shadow Gate	Amiga ST	16.40	Arena and Bratacus	Amiga ST	20.97
Silent Service	Amiga ST	16.40	Barbarian (palace)	Amiga ST	13.85
The Bard's Tale	Amiga ST	16.40	Chessmaster 2000	Amiga ST	13.40
3D Helicopter Sim'R	Amiga ST	20.90	Deep Space	Amiga ST	17.47
Backlash	Amiga ST	13.49	Flight Simulator Scenery	Amiga ST	16.85
Barbarian PSY	Amiga ST	20.90	Football Manager II	Amiga ST	16.89
Dark Castle	Amiga ST	16.85	Hotball	Amiga ST	20.90
EPT	Amiga ST	20.90	Ice Hockey	Amiga ST	20.90
Flintstones	Amiga ST	13.40	International Soccer	Amiga ST	16.85
Foundations Waste	Amiga ST	17.47	Knight Orc	Amiga ST	13.97
Hunt for Red October	Amiga ST	16.40	Paradora	Amiga ST	16.89
Indoor Sports	Amiga ST	16.40	Power Struggle	Amiga ST	12.89
Jinxter	Amiga ST	16.40	Return to Genesis	Amiga ST	13.85
Leathernecks	Amiga ST	16.89	Soccer Supremo	Amiga ST	12.89
Pink Panther	Amiga ST	12.85	Strip Poker 2+	Amiga ST	10.47
Powerplay	Amiga ST	12.89	Terrorpods	Amiga ST	16.85
SDI	Amiga ST	19.85	Time and Magik	Amiga ST	16.89
Space Quest	Amiga ST	17.49	Adv. Construction Set	Amiga	19.85
Super	Amiga ST	13.97	Aegis Animator & Images	Amiga	99.85
Test Drive	Amiga ST	16.85	Badcats	Amiga	20.90
Vixen	Amiga ST	17.89	Bionic Commandos	Amiga	20.90
Balance of Power	Amiga ST	19.85	Black Show	Amiga	13.85
Beyond Zork	Amiga ST	17.47	Blitzkrieg	Amiga	30.90
Bubble Bobble	Amiga ST	19.40	Crazy Cars	Amiga	13.40

To join: Order any two items for free membership or send £10.
S end CASH, CHEQUE or phone using VISA. You can also order via our BBS

Deja VU	Amiga	19.85	Hitchikers Guide	Amiga	19.85
Deluxe Music Construc.	Amiga	49.85	Insanity Flight	Amiga	16.40
Deluxe Paint	Amiga	17.40	Interceptor	Amiga	21.89
Deluxe Paint 2	Amiga	49.85	King of Chicago	Amiga	24.89
Deluxe Video	Amiga	49.85	Kings Quest Triple Pack	Amiga	17.49
Destroyer	Amiga	16.40	Lattice C	Amiga	139.85
Dig Paint	Amiga	37.40	Leather Goddess	Amiga	19.85
Eco	Amiga	16.85	Marauder 2	Amiga	32.89
Faerytale Adventure	Amiga	37.40	Mercenary Compendium	Amiga	17.47
Fire Power 16.50	Amiga	16.40	Omega File	Amiga	37.40
Flight 2 Scenery Disc7	Amiga	16.85	Pagesetter	Amiga	99.85
Galactic Invasion	Amiga	16.40	2 on 2 Baseball	ST	17.49
Gee Bee Air Rally	Amiga	16.89	3D Chess	ST	17.47
Gizmoz	Amiga	37.40	Arcade Force For	ST	16.85
Gridiron	Amiga	24.85	Back Pack	ST	35.85

Prices include VAT and UK postage. Make Cheques payable to: CYB Computers Limited, 9 Crown Parade, Crown Lane, Morden, Surrey SM4 5DA
Call 01 542 7662 (Voice) or 01 542 7243 (Modem(V21/V23))

BYTEBACK

VISA

ATARI ST

NEW GAMES	RRP	ONLY!
Bionic Commandos	19.95	13.95
World Darts	15.00	10.45
Phantasm	19.95	13.95
Fire and Forget	24.95	16.95
Better Dead than Alien	19.95	13.95
Killdozer	19.95	13.95
Str Crazy (Bobo)	19.95	13.9"
ELF	19.95	13.9.
Alien Syndrome	19.95	13.95
Sundog	14.95	10.45
Peter B'ley Football	19.95	13.95
Bermuda Project	24.95	16.95
Shackled	19.95	13.95
Football Manager 2	19.95	13.95
Thundercats	19.95	13.95
Soccer Supremo	14.95	10.45
Platoon	19.95	13.95
Skyblaster	19.99	13.95
Star Fleet 1	24.95	17.50
Lords of Conquest	19.95	13.95
Sidewinder	9.95	6.95
Bad Cat	19.95	13.95
Beyond Ice Place	19.99	13.95
Pandora	19.95	13.95
Buggy Boy	19.95	13.95
Vixen	19.95	13.95

GAMES	RRP	ONLY!
Arcade Force Four	24.95	16.95
Bards Tale	24.95	16.95
Black Lamp	19.95	13.95
BMX Simulator	14.99	10.45
Bubble Bobble	19.95	13.95
Captain Blood	24.95	16.95
Carrier Command	24.95	16.95
Chessmaster 2000	24.95	16.95
Dungeon Master	24.95	16.95
Flight Simulator 2	49.95	34.95
* European Scenery	24.95	16.95
Football Manager Manager	14.95	10.45
F15 Strike Eagle	24.95	16.95
Gauntlet 2	19.95	13.95
Goldrunner 2	24.95	16.95
Gunship	24.95	16.95
Hunt for Red October	24.95	16.95
Kari Warriers	14.99	10.45
International Soccer	19.95	13.95
Leader Board	24.95	16.95
Masters of the Universe	19.95	13.95
Obliterator	24.95	16.95
Oids	19.99	13.95
Outrun	19.95	13.95
Rolling Thunder	19.95	13.95
Scrabble Deluxe	19.95	13.95
Silent Service	24.95	16.95
Star Trek	19.95	13.95
Star Wars	19.95	13.95
Starquake	19.95	13.95
Strip Poker II Plus	14.95	10.45
Sub Battle Simulator	24.95	16.95
Test Drive	24.95	16.95
Vampires Empire	19.95	13.95
Wargame Construction	24.95	13.95
Xenon	19.95	13.95

ADVENTURES	RRP	ONLY!
Corruption	24.95	16.95
Deja Vu	24.95	16.95
Jinxter	24.95	16.95
Legend of the sword	24.95	16.95
Leisure Suit Larry	19.95	13.95
Mindfighter	24.99	16.95
ST Adventure Creator	39.95	29.95
Time and Magik	19.95	13.95
Unitied	24.95	16.95

ART & MUSIC	RRP	ONLY!
Advanced Art Studio	24.95	16.95
Degas Elite	24.95	16.95
Music Construction	24.95	16.95
Otantum Paint	19.95	13.95
Spectrum 512	99.95	47.95

UTILITIES	RRP	ONLY!
Desktop Publisher	99.95	79.00
Fastcom	49.95	45.00
First Word Plus	79.95	59.95
ProCopy (v 1.50p)	34.95	27.50
Word Writer	79.95	59.95

LANGUAGES	RRP	ONLY!
Fast Basic (Disk)	44.80	32.95
GST C Compiler	24.95	18.50
GST Macro Assembler	24.95	18.50
HiSoft POWER Basic	39.95	29.95

ACCESSORIES	ONLY!
3.5" Disks SS/DD (x10)	10.95
3.5" Disks DS/DD (x10)	11.95
Media Box (Holds 150 disks!)	19.95
Mouse Mat (Best quality)	6.95
Joystick/Mouse extension	4.95
4 Player game adaptor	5.50
Quickshot II Turbo	12.95
Locking Disk Box (40)	9.95

AMIGA

NEW GAMES	RRP	ONLY!
Sentinel	19.95	13.95
Better Dead than Alien	19.95	13.95
Fire and Forget	24.95	16.95
Grand Slam tennis	14.95	10.45
Scrabble Deluxe	19.95	13.95
ELF	19.95	13.95
Bobo - Str Crazy	19.95	13.95
Giganoid	14.95	10.45
Iridon	19.95	13.95
Mike the Magic Dragon	14.95	10.45
Buggy Boy	24.95	16.95
Black Lamp	19.95	13.95
Eborstar	24.95	16.95
Football Manager 2	19.95	13.95
Peter B'ley Football	19.95	13.95
Interceptor	24.95	16.95
Enlightenment	19.95	13.95
Star Fleet 1	24.95	17.50
Bad Cat	24.95	16.95
Capone	24.95	16.95
Three Stooges	29.95	20.95
Star Fleet 1	24.95	17.50
IntelliType	24.95	17.50
Crystal Hammer	19.95	13.95
Final Mission	19.95	13.95
Sky Blaster	19.95	13.95
Emerald Mines	19.95	13.95
City Defence	14.95	11.50
Romantic Encounters	24.95	16.95
Pinball Wizard	19.95	13.95
Aaargh	19.99	13.95

GAMES	RRP	ONLY!
Backlash	19.95	13.95
BMX Simulator	14.99	10.45
Bubble Bobble	19.95	13.95
Chessmaster 2000	24.95	16.95
Eagles Nest	19.95	13.95
Ferrari Formula One	24.95	16.95
Flight Simulator II	45.95	32.50
* European Scenery	24.95	16.95
Flintstones	19.95	13.95
Formula 1 Grand Prix	19.95	13.95
Garrison 2	24.95	16.95
Gee Bee Air Rally	19.95	13.95
Goldrunner	24.95	16.95
Hunt for Red October	24.99	16.95
Jet	49.95	37.50
Kikstart 2	9.95	6.95
Leaderboard	24.95	16.95
Leatherneck	19.95	13.95
Ninja Mission	9.95	6.95
Rolling Thunder	24.95	16.95
Seven Cities of Gold	14.95	11.50
Sherlock	24.95	16.95
Sidewinder	9.95	6.95
Silent Service	24.95	16.95
Star Wars	24.95	16.95
Strike Force Harrier	24.95	16.95
Strip Poker II +	14.95	11.50
Test Drive	24.95	16.95
Time Bandit	19.95	13.95
Vampires Empire	19.95	13.95
Wizball	24.95	16.95
Xenon	19.95	13.95

ADVENTURE	RRP	ONLY!
Annals of Rome	24.99	16.95
Balance of Power	29.95	20.95
Bards Tale	24.95	16.95
Defender of Crown	29.95	20.95
Faery Tale	49.95	35.00
Jinxter	24.95	16.95
Return to Atlantis	24.95	16.95
Shadowgate	24.95	16.95
Univited	29.95	20.95

MUSIC/PUBLISHING	ONLY!
Deluxe Paint 2	69.95 52.50
Deluxe Music Con	69.95 52.50
Instant Music	69.95 52.50
Photon Paint	69.95 52.50
Pixmate	49.95 37.50
Pro Sound Designer	79.95 59.95
Scribe 01 (PAL)	77.07 59.95
TV Text	69.95 52.50

UTILITIES	RRP	ONLY!
Kind Words	49.95	39.95
Publisher Plus	99.95	79.00
Scribble 2	99.95	75.00
SuperBase Personal	99.95	79.00

LANGUAGES	RRP	ONLY!
Lattice C (4.0)	189.95	129.00
MCC Macro Assembler	69.95	52.50
MCC Pascal	89.95	69.00

ACCESSORIES	ONLY!
Locking Disk Box (80)	11.95
Furry Mouse Cover!	7.50
Keyboard cover (ST or Amiga)	5.95
Wiz Card controller	3.95
Quickshot II	7.95
Arcade Joystick	16.95

The above is just a small selection of our vast stock of 16 BIT software! Ask for our full catalogue including 100's of Public Domain disks. All prices include VAT and FIRST CLASS POST! TELEPHONE (0636) 79097 for 24 Hour Credit Card Hotline! or send Cheque/Postal order/Credit Card details ..to:

BYTEBACK Dept STAM, 6 MUMBY CLOSE, NEWARK, NOTTS NG24 1JE

label, mnemonic, operand and comment. For instance,

Label	Mnemonic	Operand	Comment
start	MOVE.L	D0,(A0)+	store result

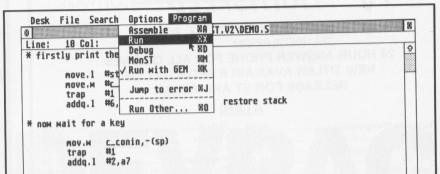
is acceptable. Each field, if used, must be separated by one or more space or tab characters. Label names can be 16 characters in length and are case-sensitive (start is different from Start is different from START). Mnemonics and operands can be written in either upper or lower case.

Assembler directives, which is a hackers way of saying instructions meant for the assembler, can be included within source files. These instructions are not usually turned into opcodes; instead they tell the assembler to perform certain actions at assembly time. For example, OPT P+ checks that all code is position-independent, NOLIST prevents any listing appearing during assembly, and IFEQ and IFNE are used for conditional assembly.

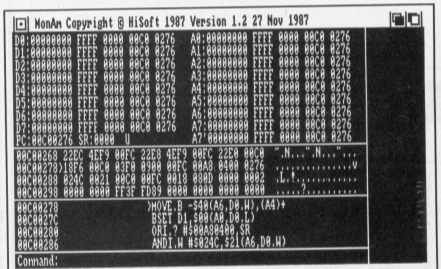
From the editor you can assemble the source file currently in memory at the click of a button. This generates the binary bytes (machine code) which is either executable or linkable (can be joined with other files created with Devpac or high level languages, to produce one large executable file). It is possible to assemble or compile a file without generating any machine code – useful for testing a source file for errors.

Machine code programs – be it those created with Devpac or those from other sources – can be debugged or simply inspected by using the supplied monitor. Code can be disassembled, examined, executed at various speeds and breakpoints inserted. The monitor is 'symbolic' which means you can look at Devpac-created programs complete with original labels – makes debugging much easier.

The monitor uses its own screen for presenting register details and so on which means the display of your program is left intact.



■ *Editing, assembling, debugging and even program execution can be done from the same place within the ST Devpac*



■ *Devpac Amiga works in much the same way as on the ST, except you can't run the monitor directly from the editor – it's a different program.*

HUMBLE ORIGINS

How do you think such a powerful programming package as Devpac was put together? Created on a £10,000 Sun and downloaded to either ST or Amiga? Far from it. A Sinclair QL – which is nothing more than a glorified eight-bit computer, and has nothing going for it apart from the fact that Bob Wade owns one – was used to develop it all. The resulting code was uploaded to an ST via a serial link.

SYNTAX BUSTERS

If this review leaves you floundering then either use your Intuition or read the following GEMs (that's enough WIMP puns – Ed):

ASSEMBLER – can mean the program that creates executable machine code programs from source code or the programming language itself.

BREAKPOINT – a debugging aid that stops a program at a particular point and displays status information.

BYTE – eight bits; any number from zero to 255.

DISASSEMBLER – displays machine code as assembler.

HEXADECIMAL – base 16 counting system used for assembly programming.

LINKER – joins several pieces of machine code together to produce one executable file.

LONGWORD – 32 bits.

MACRO – a sequence of instructions represented by a single name.

MNEMONICS – near-English commands representing 68000 assembler instructions.

MONITOR – used for debugging, tracing and hacking machine programs.

OBJECT CODE – name for the machine code file created after assembly.

REGISTERS – can be thought of as fast on-chip memory.

SOURCE CODE – the mnemonics, opcodes and labels making up an assembly language file.

WORD – 16 bits.

ARMADILLO – small, long-nosed animal that hides in corners of Format.

features 0 1 2 3 4 5
performance 0 1 2 3 4 5
ease of use 0 1 2 3 4 5
manuals 0 1 2 3 4 5
format value 0 1 2 3 4 5

ST

for

- Integrated editor, assembler and debugger
- Code optimising possible
- Reasonable information on GEM calls
- Programs can be assembled to memory and run

against

- Manual has no glossary or index
- 520s limited to 300K source files

features 0 1 2 3 4 5
performance 0 1 2 3 4 5
ease of use 0 1 2 3 4 5
manuals 0 1 2 3 4 5
format value 0 1 2 3 4 5

AMIGA

for

- Powerful conditional-assembly options
- Motorola-style macros supported
- Any errors during assembly are highlighted by cursor
- Pocket 68000 reference guide included

against

- Poor manual
- Little info on accessing operating system
- Lacks the extras of the ST version, 2.0

Public Domain Software for the Amiga

from £3 per disk all inclusve

★ Membership not necessary
★ Fast service

We have one of the largest collections of PD software for the Amiga in the UK. We currently stock:

- ❍ FISH 1-138
- ❍ AMICUS 1-26
- ❍ SLIPPED DISK 1-40
- ❍ FAUG HOTMIX 1-53

All the above are £3 each + 1 FREE when you order 10

Catalogue disk #1 available for £3

APDL special selections PaNorAmA and AUGE prices £4 each plus 1 FREE when you order 10, or £3 each for members of the Amiga Users Club.

Our own special selection

- ❍ APDL #6 CLI HELP
  Confused by CLI? This one's for you
- ❍ APDL #8 AMIGA DISK DOCTOR
  Life saving programs!
- ❍ APDL #9 SPACE SHOOT 'EM UPS
  Invaders, missiles, cosmonoids etc.
- ❍ APDL #11 AMIGA MOVIES
  Eye-popping demos
- ❍ APDL #12 AMIGA SONIX
  Let your Amiga sound off
- ❍ APDL #14 BEST ARCADE GAMES
- ❍ APDL #15 BEST BOARD GAMES
  Backgammon, Othello, Yahtzee etc.
- ❍ APDL #16 DRAWING PROGRAMS
- ❍ APDL #17 BUSINESS COLLECTION
  Editor, spreadsheet & database
- ❍ APDL #18 AMIGA ART

★ STOP PRESS ★

Just in: from the USA, PaNorAmA 1-56, from Germany, AUGE 1-15
Selection of PD software also available for Atari ST. Please write or phone for a list.
"Join the Club!" Interested in joining our user club?Write or phone for details.
Catalogue disk #2 available £3

THE AMIGA PD LIBRARY
140 Rushdale Road, Sheffield, S8 9QE
PD Hotline 0742-588429 (9am-9pm)

The ST Club

Caters for all - Beginner to Professional

Newsletter

Packed with News, reviews, articles, hints and tips, programming articles, free classified adverts, and more. Now 28 pages in A4 format; produced using DTP software and an Atari Laser.
Single issues 80pence - 12 issue subscription just £5.00!
(Subscribe now - Increases to £8 on 1st July)

Disk Magazine

Containing the best and latest Public Domain Software.
6 issue Disk Mag and 12 issue Newsletter subscription: £22.50

Public Domain Software

Over 350 disks at the last count. All available on quality branded single and double sided disks from as little as £2.00 each.
Return the coupon below for a free copy of the latest PD catalogue

Members Discounts

on PD disks, commercial software, books, accessories etc.

Laser Printing Service

From 15p per page! - Return the coupon below for a price list.

Often Cloned - Never Bettered

Please supply: ( ) Subscription (Newsletter / Disk_Mag)
( ) Sample Newsletter (80p) ( ) Sample Disk_Mag (£2.00)
( ) FREE PD Catalogue £ • Cheque / PO enclosed

NAME: _____

ADDRESS: _____

_____

Post Code: _____

The ST Club • EDCO House • 10 Colliers Wood High Street
Wimbledon • London • SW19 2AE • Tel (01) 542 0330 STA1

No surcharges on European orders • Other countries add 5% for Air Mail despatch

FREE PRIZE VOUCHER WITH EVERY GAME ORDERED

CUT PRICE SOFTWARE

FREE PRIZE VOUCHER WITH EVERY GAME ORDERED

All Products Amiga & ST unless stated otherwise AO=Amiga Only / ST=ST Only

GAMES	RRP	OUR
King Of Chicago (AO)	29.99	19.99
Defender of the Crown	29.99	19.99
Sinbad (AO)	29.99	19.99
S.D.I	29.99	19.99
Barbarian	24.95	16.95
Terrorpods	24.95	16.95
Obliterator	24.95	16.95
F/A-18 Interceptor (AO)	24.95	19.95
Jet (Sublogic) (AO)	45.95	29.95
Balance of Power	24.95	16.95
Barbarian (Palace)	19.99	13.95
Three Stooges (AO)	29.99	18.95
Black Lamp	19.95	13.95
Grand Slam Tennis (AO)	24.95	16.95
Platoon	24.95	16.95
E.C.O	24.95	16.95
Quadralien	24.95	15.95
Leatherneck	19.95	13.95
Rolling Thunder	24.99	16.99
Goldrunner 1 or 2	24.95	16.95
Shadowgate	24.95	16.95
Star Wars	24.95	16.95
Xenon	19.95	13.95
Leaderboard	19.95	10.95
Leaderboard Tournament	9.99	6.99
Football Manager II	19.99	13.99
Flight Simulator II	45.95	29.95
Turbo	19.99	12.95
Art of Chess	24.95	16.95
Ebonstar (AO)	24.99	15.99
Craps Academy (AO)	24.99	15.99
Pandora	19.95	12.95
Strip Poker II	14.95	10.95
Tetris	19.95	13.95
Jinks	24.99	16.99
Wizball	24.95	16.99
Street Fighter	24.95	15.95
Outrun (ST)	19.99	12.95
Dungeon Master (ST)	24.95	14.95
Starglider II	24.95	16.95
Fire & Forget	24.95	16.95

GAMES	RRP	OUR
Buggy Boy (ST)	19.95	12.95
Buggy Boy (AO)	24.95	16.95
Mortville Manor	24.95	16.95
Starray	24.95	15.95
Bionic Commandos	24.99	16.99
Better Dead Than Alien	19.95	13.95
Peter Beadsley Soccer	19.95	12.95
Scrabble (ST)	19.95	13.95
Dark Castle	24.95	16.95
Gee Bee Air Rally	24.95	16.95
Virus	24.99	15.99
Captain Blood (ST)	24.95	15.95
Carrier Command (ST)	24.95	15.95
Sky Blaster	19.95	13.95
U.M Simulator (ST)	24.95	16.95
Star Trek (ST)	19.95	13.95
Alien Syndrome (ST)	19.99	12.95
Crystal Hammer	19.95	13.95
Gunship (ST)	24.95	16.95
Battleships	19.95	13.95
Hollywood Poker	19.95	13.95
Vampires Empires	19.95	13.95
Bad Cat	24.95	19.95
Time Stood still	19.95	12.95
Silent Service	24.95	16.95
Bubble Bobble	24.95	16.95
Mercenary	24.95	16.95
Road War 2000	24.99	16.99
Hardball	24.99	16.99
GFL Football	24.99	16.99
Phantasie III	24.99	16.99
Thunder Boy	14.95	10.95
Aghhhh (AO)	29.95	19.95

BUSINESS PRODUCTS	RRP	OUR
Superbase Personnal	99.95	64.95
Superbase Professional	249.95	169.95
Wordperfect	288.85	149.95
Logistixs	114.95	75.95
VIP Professtional	228.85	149.95
Assembler	69.95	49.95

BUSINESS PRODUCTS	RRP	OUR
Amiga File	69.95	49.95
Lattice C (AO)	189.95	139.95
Pascal	89.95	59.95
Lattice C (SP)	99.95	69.95
K-Word II (ST)	59.95	39.95
Home Accounts (ST)	24.95	16.95
Animator (AO)	57.50	39.95
Animator 3D (AO)	129.95	99.95
Protext (ST)	79.95	49.95
Video Title	110.40	99.95
Digicalc (ST)	39.95	29.95
Sculpt 3D	89.00	79.00
Draw Plus	198.95	149.95
GFA Basic (ST)	45.95	29.95
Audio Master	46.00	39.00
Sonix	57.50	44.95
K-Spread II (ST)	79.95	49.95
K-Data	49.95	34.95
K-Seka	49.95	34.95
KDatat	49.95	34.95
K-Gadget	29.95	19.95
K-Text	19.95	14.95
K-Comm II	49.95	34.95
The works !	149.95	119.95
GFA Draft Plus (ST)	139.95	99.95
Write & File	69.95	49.95

ADVENTURES	RRP	OUR
Jinxter	24.95	16.95
Guild of Theives	24.95	16.95
Mindfighter	24.99	15.99
Stac ST Adventure Creator	39.95	24.95
Corruption	24.95	15.99
Uninvited	29.95	19.95
Kings Quest Triple	29.99	19.95
Hitch Hikers Guide	29.99	19.95
Leather Goddess	29.99	19.99
Plundered Hearts	24.99	16.99
Station Fall	29.99	19.99
Phantisie III	24.99	16.99
Time + Magik	19.95	16.95

ADVENTURES	RRP	OUR
Legend of the Sword	29.95	19.95

HOW TO ORDER:

All Prices Include VAT
Game Products Postage Free.
(U.K. Mainland Only)

Overseas Orders Add £1.00
Per Disk Airmail Add £2.00

Per Disk Cheques / P. Order
(Sterling Only Please)

Made Payable to:

CUT PRICE SOFTWARE LTD
17 STAPLE TYE,
HARLOW, ESSEX.
CM18 7LX

Visa & Access Orders Welcome
(24 hour Answerphone)
(0279) 24433/31956

Securicor Delivery £6.95
Record Delivery £2.50
Please Send S.A.E. Full range of Business Software Available on ST & Amiga

FREE DAY TRIP TO FRANCE .....FREE WEEKEND BREAKS.....COLLECT VOUCHERS FOR.....FREE DISCS.....FREE GAMES

TIPS

DESKTOP

Two pages of tips, hints, wrinkles and dodges exclusively for ST owners. Read all the bits the manuals try to hide.

Fingers on the buttons

If you have several windows on screen – say for two or more drives, only one can be active at once (indicated by a highlighted border). If you want to run a program held in an inactive window, the normal procedure is to click once on that window to activate it and to double click on the appropriate file icon to run the program. A much simpler method is to hold the right mouse button down while double clicking on the required file icon with the left button. In then doesn't matter if the window is currently inactive.

R Burrows
Weston-Super-Mare, Avon

Doctoring INFo

Providing you own a word processor or text editor (in fact, ST BASIC's editor will do), it is possible to load the DESKTOP.INF file into the editor and tune it to your needs. DESKTOP.INF is the file saved to disk when you select Save Desktop from the Options menu.

Standard DESKTOP.INF files contain information for displaying one TRASH icon and two DRIVE icons (A and B). You can add further TRASH cans or other icons by adding to the information already contained in the file. For instance, within the file there is a line much like:

`#T 00 03 02 FF TRASH@ @`

where:

`T` is a letter describing an icon's function (M for disk drive and T for trash)

`00` is the x co-ordinate of an icon

`03` is the y co-ordinate of an icon

`02` is the type of icon to be displayed (00 for floppy disk, 01 for Folder, 02 for Trash, 03 for program file, 04 for data file)

`FF` is a marker. Anything that follows this will appear as text under a particular icon

`@ @` is an end of text marker

It's amusing to have 10 or 15 TRASH icons on the screen at once – not at all useful, but amusing. This can be achieved by repeating the line above as many times as required. If you don't change the co-ordinates of the icons each time it is repeated, all of them will lie in the same place. Save your changes and re-boot your system. Your screen should fill with dustbins. It is possible to do the same with other icons.

If you have a second drive attached and wish control to pass to drive B on switch on, then try the following modification on the line `#W 00 00 0A 01 1E 17 08 A:\*.*@:.` Change `A:\*.*@` to `B:\*.*@`. This works if you ensure, on boot up, that drive A contains the modified DESKTOP.INF file.

Lee Harris
Kingsthorpe, Northampton

Get lost

Last month we described how to install applications so that clicking on a data file starts up the application and loads itself into that program. That's all well and good, but what if you want to send the contents of a data file to the screen or printer and you've already installed its application? Simple, you can't. Not, that is, unless you erase the DESKTOP.INF file or change the data file's filetype.

The procedure for removing the DESKTOP.INF file is simple: click once on the DESKTOP.INF icon and drag it to the TRASH icon. Reset the computer and you can now send the contents of the file to screen or printer. This is a drastic measure and not normally recommended unless you have no further use for the DESKTOP.INF file.

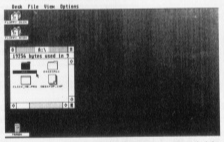
Your second option is to rename the data file: click once on its icon to highlight it and select View Info from the File menu. Press [Delete] three times and give the file a .TMP (for temporary) filetype. Click on the OK button to close the info window. Now when you double click on the .TMP file, you'll be able to send its contents to screen or printer. Don't forget to rename it back once you've finished.

Running accessories

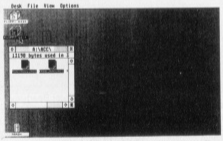
Several readers have had trouble getting the desktop accessories from our cover disks to work correctly. Here's a step by step guide to help you install the accessories found on our disks, but first an explanation of what accessories are:

Unlike standard .PRG or .TOS

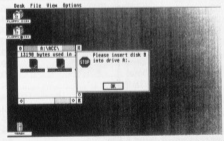
INSTALLING ACCESSORIES – STEP BY STEP



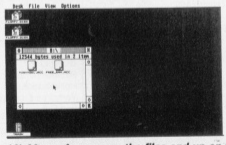
(1) Double-click on the accessories folder



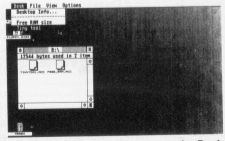
(2) Drag all the .ACC files on to drive B



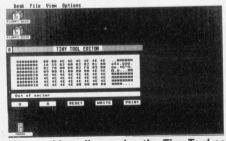
(3) You'll be asked to "insert disk B". Put in the disk for copying onto, and click OK



(4) After a few swaps, the files end up on B



(5) The accessories are now on the Desk menu



(6) ...and happily running the Tiny Tool accessory.

files, accessories (discernible by their .ACC extensions) can't be clicked and run. Instead, GEM must be given instructions to load them at start up (this is explained later). The files themselves must be in the root or main directory so GEM can find them. Once installed, an accessory is run by pulling down the Desk menu and clicking on the accessory's name. Up to six accessories can be held in memory at once – but they take up memory all the time the ST's running, so only install those you really need.

The first step is to format a fresh disk or ensure you've got a disk with plenty of space (see the 'Beginner's Corner' box). Now insert the cover disk (or whichever disk you want to copy accessories *from*) and double click on the drive A icon. If you can't see the ACC folder, drag the scroll bars until you can. Double click on the ACC folder and all the accessories should spring to view. Once you've selected the accessories you want to copy, drag them to the drive B icon. GEM then copies the files. At various stages you're asked to insert disk A or disk B – do so, but don't confuse them. To be on the safe side, write protect the disk you're copying from.

When the copying is finished, insert the disk you copied to into drive A and reset the ST by pressing the button at the back. Once the machine restarts, the Desktop reappears and you can run the newly installed accessories by selecting them from the Desk menu.

MONEY FOR NOTHING

Well, that's not altogether true – but almost. We want your tips on anything and Everything ST-related. Be it tips on hardware mods, getting the best out of software, low-level ROM calls or simply how to use the Desktop to better effect, we need them. In return, the star tipster each month wins £30. Now that can't be bad: money for your discoveries.

Rush your GEMs (ho, ho!) to Desktop, ST Amiga Format, 4 Queen Street, Bath, BA1 1EJ. Label your letters clearly: Future publishes several magazine each month, and we certainly wouldn't want your tips reaching the eyes of prospective Diesel Car buyers.

This month's £30 prize winner is Lee Harris from Northampton, for his devilish info on Desktop Info. Could it be you next time?

BEGINNER'S CORNER

Beginner's Corner provides more detailed information on aspects of the Desktop which may seem obvious once you know them, but can be very puzzling until you do.

FORMATTING DISKS

This operation sets up a series of magnetic 'markers' on the disk so that the ST can find its way around. Any new disk must be formatted before files can be saved to or read from it.

To try this out, pick either a brand new disk which has never been formatted, or a disk with no valuable programs or data on it. Formatting erases any information already on the disk, so make sure you have the right one. Insert the disk into drive A, click once on the Drive A icon to highlight it and select Format from the File menu.

A message warning you that you are about to erase the contents of the disk appears. Click on OK if you're absolutely sure you don't mind losing this data. A box appears with various formatting options: Single sided, Double sided, Format, Exit. For now just click on Format and a bar graph shows the increasing proportion of the disk that's been formatted. When it's finished another window shows the amount of space available on the disk. Click on OK and the formatting options window appears again. Click on Exit. The disk has been formatted.

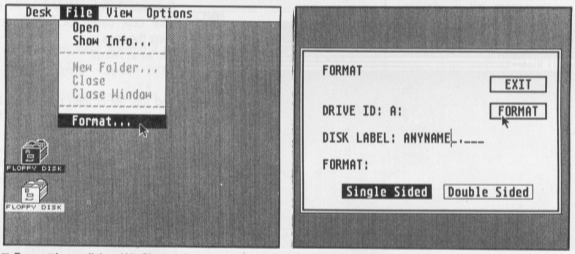
The other formatting options, Single sided and Double sided, refer to the number of drive heads present in the disk drive. Early 520STFMs (pre-Summer promotion models) have single sided drives; all others have double sided ones. Double sided drives can store twice as much information as single sided drives: select Double sided from the formatting-options box if you're sure your drive is double sided.

WINDOWS

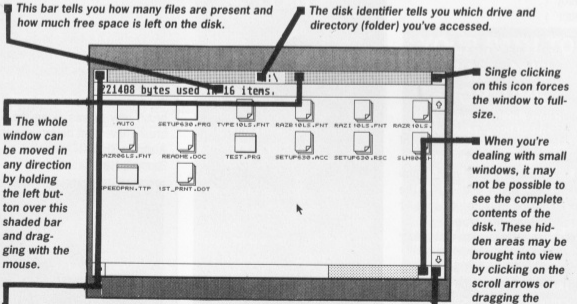
It is possible to call up a window by inserting a disk in the drive and double clicking on a drive icon. The window shows information on files and folders stored on the disk.

COPYING FILES

Select the files you want to copy by holding down [Shift] and clicking once on each file's icon to highlight it. Release [Shift], position the pointer over any one of the selected icons and holding the left mouse button down, drag them all with the mouse to the destination window or drive icon.



■ *Formatting a disk... (1), Choose Format from the File menu. (2) Pick a label if you want and choose single sided (if you've got an old 520ST) or double sided (if it is a 1040, Mega, or new 520 with the bigger drive).*


This bar tells you how many files are present and how much free space is left on the disk.
The disk identifier tells you which drive and directory (folder) you've accessed.
221408 bytes used in 16 items.
Single clicking on this icon forces the window to full-size.
The whole window can be moved in any direction by holding the left button over this shaded bar and dragging with the mouse.
When you're dealing with small windows, it may not be possible to see the complete contents of the disk. These hidden areas may be brought into view by clicking on the scroll arrows or dragging the scroll bars. The scroll bars are generally used for moving greater distances.
Click this and the window disappears.
A window can occupy any amount of space; anything from a few characters to the whole screen. To change the size of a window use the size box icon. Pressing the left mouse button over this icon and drag the pointer in any direction to change the shape of the window. Let go of the button when you are satisfied with the window's shape.

C TIPS WORKBENCH

The secret life of the Amiga exposed! Read these pages and learn more about your computer than... well, than somebody who doesn't read them. Every month we're giving £30 prizes to the best tips – Michael Saunby of Camberley and Andrew Rispoli of Barnet scoop the jackpot this time with their ingenious CLI and Deluxe Paint tips.

By any other name

The Amiga's CLI is notorious for being verbose – command lines can be 40 or 50 characters long quite easily, so the chances of making a typing mistake are very high.

It would be very handy to be able to define a shorter 'alias' for these long commands. This technique allows you to do just that.

1) Create a file called ALIAS (using ED, for instance) looking like this:

```
.K alias/a,command/a,opt1
   ,opt2,opt3
.BRA {
.KET }
echo >s:{alias} ".K
   arg1,arg2*n{command}
   <arg1> <arg2> {opt1}
   {opt2} {opt3}"
echo "{alias} is now an
   alias for {command}
   {opt1} {opt2} {opt3}"
```

Here are two examples of aliases:

1) You want to list all your C program files, which end in .C. The full command would be `LIST PAT #?.C`. Instead, first type

```
EXECUTE ALIAS LIC LIST PAT
   #?.C
```

Now LIC is defined as an alias for LIST PAT #?.C. Just type

```
EXECUTE LIC
```

and all .C files in the current directory will be shown. Typing EXECUTE LIC SOURCE would list all the .C files in your SOURCE directory.

2) You want to format disks from the CLI in any drive, naming them 'Empty'. Set up an alias with

```
EXECUTE ALIAS FMT SYS:SYS-
   TEM/FORMAT NAME EMPTY
```

This sets FMT up as your abbreviated alias.

```
EXECUTE FMT DRIVE DF2:
```

now formats a disk in drive DF2: with name 'Empty'.

What is happening is that the ALIAS command file writes the alias definition to a new command file, which is then run with the execute command. If you follow Example 1 you will find a file on your disk called LIC which contains the lines

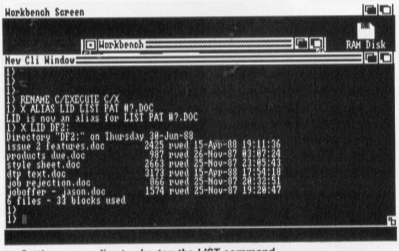
```
.K arg1,arg2
LIST <arg1> <arg2> PAT
   #?.C
```

and this file is then processed by the Execute command to do the hard work.

To make aliases more convenient, you should rename the EXECUTE command to be something shorter – say just X.To do this, simply go into the C directory of your boot disk and rename the EXECUTE file as X. Now just typing `X LIC` would do example 1's file list for you.

As it stands, the alias command file here only allows you a maximum of three arguments to the command when you define the alias (PAT and #?.C are both arguments in example 1), and two more when you run it (SOURCE is an extra argument in example 1). You can increase these if you like by adding more {opt}s or <arg>s respectively in the ALIAS command file.

To make full use of this tech-


Workbench Screen
Workbench
RAM Disk
New Cli Window
1.)
2.)
3.)
1) RENAME C/EXECUTE C/X
2) X ALIAS LIC LIST PAT #?.DOC
LIC is now an alias for LIST PAT #?.DOC
1) X LIC DF2:
Directory "DF2:" on Thursday 30-Jun-88
issue 2 features.doc 2425 rwed 15-Apr-88 19:11:36
products due.doc 987 rwed 26-Nov-87 03:07:24
style sheet.doc 2661 rwed 25-Nov-87 22:05:43
dtp text.doc 3173 rwed 15-Apr-88 17:54:10
job rejection.doc 866 rwed 25-Nov-87 20:32:51
johoffer - jason.doc 1574 rwed 25-Nov-87 19:20:47
6 files - 33 blocks used
1.)

■ *Setting up an alias to shorten the LIST command*

Channel 1081?

Here is how to turn your Amiga 1081 Monitor into a TV (untested by the Format team – proceed with care!) All you need is a video recorder.

First of all, connect the audio out from the video recorder to the audio in on the monitor, and do the same with the video out and video in lines.

Then pull down the front panel of the 1081 and press the CVBS switch. Now any output from the Video will be sent to the monitor, and because the video receives the TV signals you can watch your favourite programs on the top quality display of the 1081 monitor.

Richard Clafton
Osmondthorpe, Leeds

Deluxe Paint tips

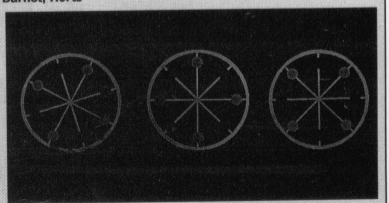
If you've ever wanted to make a simple 2-frame animation using Deluxe Paint, then try this simple tip. Draw (or load) your first image into the main screen, then swap to the spare screen by pressing J, and draw or load your second image.

Press [F10] to get rid of the menu and title bar (pressing [F10] again gets them back) and hold down J. You will see the screen flipping from frame 1 to frame 2 and back again in a rough and ready animation.

Quite a fun thing to do is is to load KingTut into both screens and then edit one of the images so that one eye is closed. When you hold J down it looks as though he's winking!

Another useful tip which makes drawing easier, ensures you draw dead straight lines in Deluxe. If you hold the [Shift] key down then the brush only moves along the X or Y axis in a straight line. The last brush movement determines the axis which is constrained.

Andrew Rispoli
Barnet, Herts



■ *Instant animations with Deluxe Paint*

nique you'll need to have your S: directory assigned to the RAM disk – if you do this, make sure you save any new definitions back to floppy disk otherwise you'll lose them when you turn off.

Michael Saunby
Camberley, Surrey

Personal prompt

The CLI's PROMPT command is quite a fun one to use for customising your Amiga system. Rather than the boring old '1>' prompt, you can get the CLI to say anything you like instead, for example 'Yes?'. Simply type

```
PROMPT "YES?"
```

If you like to have two or three CLIs on the go at once, you can arrange for the number of the current one to be displayed by inserting %N in the prompt string:

```
PROMPT "%N) Yes?"
```

to give you '1) Yes?', '2) Yes?' etc. To revert to the standard prompt, use PROMPT "%N>"

Craig Poxon
Chelmsford, Essex

Scribble shortcuts

The popular Scribble! wordprocessor, as bundled with The Works package given away with recent A500 sales, has many different keystroke shortcuts. Mice and menus are all very well, but when you're typing away it's a real pain to have to reach for the mouse and click on menus.

[Shift]↑	up one screen
[Shift]↓	down one screen
[Shift]←	beginning of document
[Shift]→	end of document
[Alt]←	beginning of line
[Alt]→	end of line

The manual's list of key commands on page 68 lists a series of [Alt] keys – these don't work! Use the right Amiga key in place of the [Alt] key and they're OK.

Users of WordStar on other micros will be pleased to learn that Scribble allows some of the same keystrokes:

[Ctrl]-V	toggle insert on/off
[Ctrl]-R,C	scroll up or down a page
[Ctrl]-Y	delete current line
[Ctrl]-T	delete to end of word
[Ctrl]-S,D,E,X	cursor one character left, right, up and down
[Ctrl]-A,F	cursor one word left or right
[Ctrl]-L	repeat search
[Ctrl]-G,H	delete character right, left

ASK answered

Anybody who has splashed out the £20-plus for the Bantam AmigaDOS manual may have noticed a frustrating omission. The C directory of the Amiga's boot disk has an ASK command file in it, but needless to say the Commodore manual doesn't explain it at all, and even the 'definitive' Bantam one omits it. Does it really exist?

Yes, is the answer. It is designed to be used in command files so that you can ask a question and then take some action depending on the answer the user gives. `ASK "Some string of text"` puts 'Some string of text' on the screen and waits for you to type Y or N (and [Return]). You can test the result with the IF command: if the answer was Y, then the WARN flag is set; if the answer was N, it is left unset. Here is a template for you to build on:

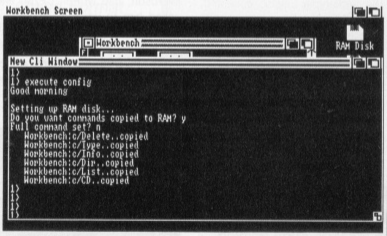
```
ASK "Type Y or N"
IF WARN
<commands here are run if the user typed Y>
ELSE
<commands here are run if the user typed N>
ENDIF
```

All the usual IF commands can be used, including NOT. So, to give a user the option to abort a command sequence:

```
ASK "Do you want to
   carry on"?
IF NOT WARN
SKIP EXIT
ENDIF
.
.(body of command file)
.
LAB EXIT
```

As an example of nesting questions and conditions, here's an example command set which you might put in your startup-sequence. It asks you if you want to set your RAM disk up to hold any CLI commands, then if you reply Yes it asks whether you want the full set or just the core commands.

```
ECHO "Good morning"
ECHO "Setting up RAM
   disk..."
ASK "Do you want com-
   mands copied to RAM?"
IF WARN
CD C
ASK "Full command set?"
IF WARN
COPY #? TO RAM:
ELSE
COPY DIR|CD|DELETE|TYPE
   |LIST|INFO TO RAM:
ENDIF
PATH RAM: ADD
CD /
```



■ *The ASK command gives you interactive Execute files*

Extending your reach

'Extended selection' is a technique of mousemanship that all Amiga users ought to understand. When you click the mouse on an icon, the colours invert to show it has been selected. You can then drag it around, copy it and so on.

If you click on another icon, the first one becomes de-selected and reverts to its normal colours. However, if you hold the [Shift] key down and click on an icon, selected icons stay selected and the new one is added into the group.

One of the main uses of this is in organising your windows neatly with the 'snapshot' Workbench function. You may have a disk whose icons are all higgledy-piggledy overlapping, and you want to arrange them in a particular order. You can drag the icons into beautiful serried ranks, but the Amiga doesn't remember the order unless you save it – if you close the window and reopen it the old mess comes back.

To save the neat version, first select all the icons in the window at once, using extended selection: click on the first one, then shift-click on all the rest in turn. Now from the 'Special' menu on the Workbench choose the Snapshot option – the positions of all the icons you had selected, ie. the lot, are saved for future reference.

Extended selection is also used when running some programs. For example, on this month's cover disk the slide show program Vilbm needs you to select all the picture files to be displayed, and then run the program. You would click on the first file to be shown, shift-click on the rest in the order they are to be displayed, then shift-double click on the Vilbm icon to run the program without undoing the previously selected files.

All at once

In the first issue of Format was a tip for making up a RAM disk full of useful utilities like DIR, CD and so on. While this was fine, it isn't necessary to copy all the files individually in the startup-sequence. You can copy more than one file at a time with a single COPY command, so a shorter startup-sequence is

```
MAKEDIR RAM:C
CD C
COPY DIR|CD|INFO|TYPE TO
   RAM:C QUIET
PATH RAM:C ADD
CD /
```

The interesting part is the third line – putting a vertical bar (next to the backspace key on the keyboard) between filenames forces AmigaDos to copy them all without the need to have a COPY line for each.

Michael Tate
Tidworth, Hants

YOUR PATH TO FAME AND FORTUNE

Your magazine needs you! If you know any good tips for your Amiga, we want to know. Whether it's an unknown CLI command, a handy mouseclick from the Workbench, or tips about specific packages, you could have your genius exposed to 40,000 readers a month. And come on programmers – you must have a few snippets up your sleeves – handy subroutines, neat tricks; don't keep them to yourselves.

Send your tips to:
Workbench, ST Amiga Format, 4 Queen Street, Bath BA1 1EJ.
As if national fame weren't enough, the best tips each month win a £30 prize.

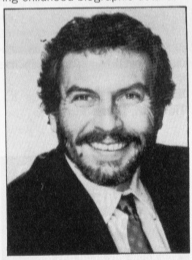
BOOKS

PORTRAITS IN SILICON

by Robert Slater
£22.50, hardback, 374 pages ■ Published by MIT Press
■ ISBN 0-262-19262-4

Computers are so much a way of life it's easy to be lulled into thinking that they've always been around. In fact, the world's very first computer program ran almost 40 years ago to the day, on June 21st 1948 at Manchester University, England.

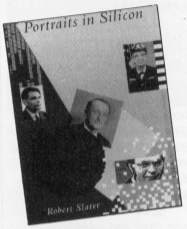
Rapid progress in the field has had one interesting side effect: unlike almost any other area of technology, virtually all the major people in the history of computers are still alive and active today. *Portraits in Silicon* is a fascinating attempt to interview those people, find out what motivated them, how they worked, and where they think computers are going. Each chapter is an interview with a specific pioneer, running to 10 pages or so. This is a good length, long enough to relate the important facts without labouring over boring childhood biographic details.



■ Nolan Bushnell, founder of Atari. He made his fortune with Pong, the classic video game invented in 1972. He sold out to Warner Communications (who later sold to Jack Tramiel) and went off to set up a chain of pizza parlours.

Sitting comfortably?

The story starts with Charles Babbage, the Victorian pioneer. He built mechanical computing engines and used many of the principles 'invented' by others a hundred years later, like binary arithmetic. His assistant was Ada



Lovelace, Lord Byron's daughter – it's after her that the new programming language, Ada, is named.

Alan Turing was a brilliant mathematician who was instrumental in the British secret war effort. He built a series of 'Colossus' computers at the Bletchley Park codebreaking centre, which helped to crack the Germans' Enigma code system. The archetypal English eccentric, he would often been seen on his bicycle wearing a gas mask to ward off bouts of hay fever. He killed himself in 1954 after being convicted of homosexuality.

After these first two, the rest of the book's subjects are alive and kicking. John von Neumann devised the operating principles of the digital computer, but took up computing late in life after a career in mathematics including proposing the detonation method for the Nagasaki atom bomb. Conrad Zuse, a German, may well have built the first electronic computer, but his efforts were largely overlooked in the aftermath of Germany's defeat in World War II. John Atanasoff sued for the right to be legally credited with the invention of the computer (and yes, he was American).

William Shockley is an intriguing case. He invented the transistor in 1947 and won the 1956 physics Nobel prize for his work. However brilliant he may have been technically, he received less success in his aspirations as a politician which were based around a program of repatriating blacks and sterilizing people with low IQs. A real humanitarian!

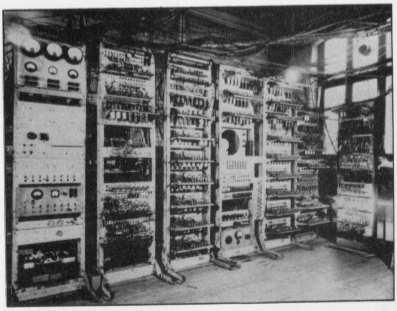
Grace Hopper is almost an institution in herself; she's 82 now, and finally retired from her post as a rear-admiral in the US navy three years ago. In 1959 she designed the COBOL language that 90% of the world's finance centres still revolve around today. She was the one to coin the term 'bug' for a program error; the story goes that one of her programs went wrong one day, and after hours puzzling over the code she discovered that an insect had fallen into the computer and shorted vital circuits!

Gary Kildall begat CP/M, the first true microcomputer operating system and arguably the most important piece of software ever – it made programs portable between different models of computer. When IBM launched their PC around 1980, they approached Bill Gates of Microsoft under the mistaken belief that his company, Microsoft, had written CP/M, and asked him to write a version for them. Deciding that discretion was the better part of honesty, Gates wrote PC-DOS for them rather than give them Kildall's phone number. Kildall wasn't amused when he found out.

It's a series of interviews giving a personal perspective on specific events and inventions. Slater, while undoubtedly well connected in the field of computing, is neither an inspiring writer nor a penetrating interviewer. He seems very ready to print egotistical assertions from his interviewees without any attempt to research or qualify their thought. For example, he allows John Atanasoff to ramble on at length about why he was the One True Begetter of the electronic computer, which is a pretty dubious assertion.

Inevitably, apart from mentioning Babbage and Turing, Portraits in Silicon is very American-biased. It's almost as though the early history of computing has been rewritten – maybe over here we're very English-biased, but it does seem that Slater is genuinely unaware that Manchester University in England built both the first electronic computer (1948) and the first all-transistor computer (1953).

Even so, Portraits in Silicon is unarguably fascinating. As a record of the personal histories of just about all the important people in the development of the computer, it's compulsive reading. And it only costs as much as one game, after all.



■ The Manchester Mark I, the world's first real computer – even if the Americans won't admit it.

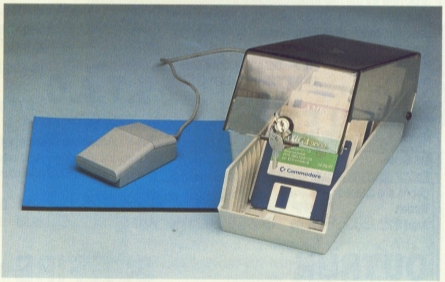
Curate's egg

Portraits in Silicon doesn't attempt to be a history of computing, and that is at times very frustrating.

THIS MAGAZINE IS RUBBISH.

DISK BOXES AND MOUSE MATS ARE USELESS.

THE SPECTRUM IS THE WORLD'S GREATEST COMPUTER.



If you agree with any of these statements, please turn the page now. For those still reading, we'd like to make an offer you'll find hard to refuse. Take out a launch subscription to *ST Amiga Format* and we'll send you a complimentary gift pack, consisting of a high-quality, hard-wearing mouse mat (RRP £5.95) and a smart, lockable disk box capable of holding 40 disks (RRP £12.95).

A 12-issue subscription costs just £29.95, and that of course includes a disk packed with software on every issue.

We hope you'll agree that *ST Amiga Format* offers spectacular vaue for money and provides valuable coverage of all aspects of your computer. If so, you'd better guarantee yourself a monthly copy, because you can be sure of one thing: the magazine won't be hanging around long on newsagents' shelves.

NO QUIBBLE GUARANTEE

If after receiving three issues of ST Amiga Format you decide you no longer wish to subscribe, you may write to us and claim a pro rata refund for all outstanding issues – you would still be able to keep your gift pack.

FREE WHEN YOU SUBSCRIBE!

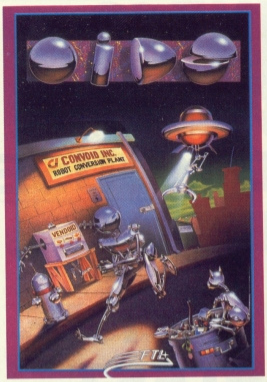
- Smart, high-quality **disk box** holding up to 40 3.5in disks.
- Hinged, smoked perspex, lockable lid keeps away the dirt.
- Supplied with dividers for easy disk filing.
- Normal retail price £12.95.

plus

- High-quality, hard-wearing **mouse mat.**
- Rubber base, nylon top for smooth mouse movement.
- Helps prevent mouse getting clogged with dirt.
- Normal retail price £5.95.

HOW TO ORDER

Please use the FREEPOST form on the following page or the identical card attached to the outside of the magazine. Alternatively dial 0458 74011 with your credit card details.



OIDS

FTL/Mirrorsoft

You've been tantalized by the demo on our cover disk, now try the real thing, complete with five galaxies each with up to 8 planets, a game designer, redefinable keys, and five lives each time.

Version	RRP	Our price	Order code
Atari ST	19.99	**15.95**	FO148ST

GAUNLET 2

US Gold

Follow up to the arcade classic – the new dungeons are deadlier than ever.

Version	RRP	Our price	Order code
Atari ST	19.99	**15.95**	FO123ST

OUTRUN

US Gold

Conversion of the coin op smash hit motor racing game.

Version	RRP	Our price	Order code
Atari ST	19.99	**15.95**	FO128ST

DUNGEON MASTER

FTL/Mirrorsoft

Enter the enormous eerie dungeons at your peril in this incredible role-playing adventure. Astonishing 3D graphics, incredibly detailed gameplay.

Version	RRP	Our price	Order code
Atari ST	24.99	**19.95**	FO149ST

ROLLING THUNDER

US Gold

Impressive conversion of the Namco coin up featuring an undercover cop in platform shoot-em-up action.

Version	RRP	Our price	Order code
Atari ST	19.99	**15.95**	FO146ST
Amiga	24.99	**19.95**	FO146AM

JINKS

US Gold

Incredibly addictive, horizontally-scrolling bounce-em-up. Fabulous sound effects!

Version	RRP	Our price	Order code
Amiga	24.99	**19.95**	FO157AM

S.T.A.C.

Incentive

The ST Adventure Creator is a remarkable piece of software allowing you to create sophisticated, commercial-standard adventure games, complete with graphics.

Version	RRP	Our price	Order code
Atari ST	39.95	**29.95**	FO161ST

SPITFIRE 40

Mirrorsoft

If you prefer the Second World War to modern day air combat, this is the program for you.

Version	RRP	Our price	Order code
Atari ST	24.95	**19.95**	FO158ST

LEADERBOARD

US Gold/Access

The golfing simulation *par excellence*. 18 holes depicted in great detail, superb animation, long-term challenge.

Version	RRP	Our price	Order code
Atari ST	24.99	**15.95**	FO107ST
Amiga	24.99	**19.95**	FO107AM

INTERCEPTOR

Electronic Arts

You've seen it on the cover disk, now buy the real thing. Incredible, fast 3D graphics, numerous different views of the action. The greatest combat flight simulator yet..

Version	RRP	Our price	Order code
Amiga	24.95	**19.95**	FO160AM

EPYX ON ST

US Gold/Epyx

Compilation of four great titles: Winter Games, World Games, Summer Games, Pitstop 2.

Version	RRP	Our price	Order code
Atari ST	19.99	**15.95**	FO156ST

STRIKE FORCE HARRIER

Mirrorsoft

All action flight simulator featuring 3D cockpit view, combat, and huge ground area to explore.

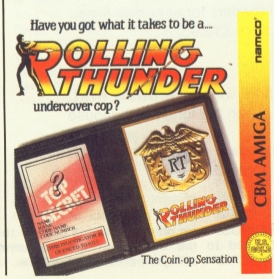
Version	RRP	Our price	Order code
Atari ST	24.95	**19.95**	FO115ST
Amiga	24.95	**19.95**	FO115AM

FERRARI FORMULA ONE

Electronic Arts

Superbly detailed simulation of the formula one championship. Numerous courses, car preparation, high-speed racing, etc.

Version	RRP	Our price	Order code
Amiga	24.95	**19.95**	FO159AM



BIONIC COMMANDO

US Gold

The Capcom arcade game which sees the fate of the world depending on the performance of the warriors of bionic power...

Version	RRP	Our Price	Order Code
Atari ST	19.99	14.95	FO24ST

ST AMIGA FORMAT

READER OFFERS

Fantastic savings on some of the hottest 16-bit software around!

Fast delivery • Friendly service • Fabulous discounts

HOW TO ORDER

Just make a note of the details of the items you want, including the order code. Then fill these in on the free-post form printed on this page, or use the identical perforated card attached to the back of the magazine.

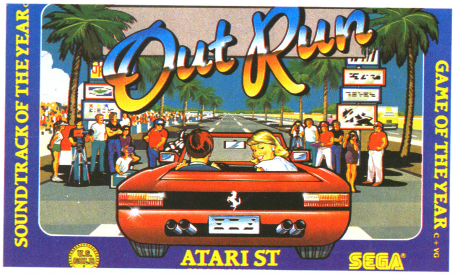
Post this, together with your credit card details or cheque to the Free Post address listed – you need pay no postage.

Alternatively ring 0458 74011 and ask for Format Credit Card Orders.

PLEASE NOTE

1. All items are despatched by first class mail.
2. All prices include VAT, postage and packing.
4. You will normally receive software within 7 days of ordering.

CREDIT CARD HOTLINE
0458 74011



ORDER FORM

Please rush me the following items from the ST Amiga Format special offer pages.

Order code	Title	Price
1.		
2.		
3.		
4.		
5.		

Total Software Order — Box A

■ Send this form to:
FORMAT Offers
FREEPOST
SOMERTON
Somerset TA11 7BR
No stamp required if posted in the UK, Channel Islands or Isle of Man.

SUBSCRIPTION ORDERS

☐ Tick here for a 12 issue subscription to ST Amiga Format costing £29.95. This entitles you to a FREE disk box + mouse mat.

Subscriber's total payable (box A + £29.95) — Box B

Name

Address

Phone (if poss) Computer

Method of payment ☐ACCESS • ☐VISA • ☐CHEQUE • ☐P.O.

Cred. card no. Exp.date

Please make out cheques and postal orders to Future Publishing Ltd.
This form is valid until August 31st, 1988

BUT SERIOUSLY, FOLKS

1 ● DIGICALC

At last, an inexpensive and genuinely easy to use spreadsheet program. Simple enough for the beginner, powerful and fast enough for the professional.

See the FREE demonstration version enclosed with this magazine.

£39.95

2 ● HOME ACCOUNTS

Ideal for both home users and small businesses. Fully GEM based, very simple to use, this complete home accounting package will cater for up to 13 income accounts (e.g., bank, credit card, HP) and 60 categories of household expenditure (e.g., mortgage, rates, food, etc.) with optional budgeting. The program will automatically handle 100 standing orders, etc., and allow you to produce your own statements to check bank account(s)/charges, credit cards, etc. Process up to 300 transactions per account per year. Comprehensive reporting facilities include: detailed statements, budget forecasts, pie and bar charts and much, much more.

You'll wonder how you ever managed without it.

£24.95

3 ● MAILSHOT

A powerful menu-driven mailing list program which uses a unique system for on-screen scrolling of labels. This WYSIWYG (what you see is what you get) system means that any label format you define on the screen will be identical when printed. As well as powerful sorting and searching (search for anything, anywhere!), special routines include: detection of duplicate labels, surname sorting and many, many more. For business users, **MAILSHOT PLUS** is also available.

Why set your sights lower?

£24.95

All software written in the UK.
Prices include VAT and First Class P/P (add £2.00 for export).

24 HR CREDIT CARD HOT LINE — 0395 45059

ORDER NOW ● ORDER NOW ● ORDER NOW

Please rush me by return *(enter quantity):*

Atari	Amiga		Price
.....	.....	**Digicalc**	**£39.95**
.....	.....	**Home Accounts** (Atari ST only)	**£24.95**
.....	.....	**Mailshot**	**£24.95**
.....	.....	**Mailshot Plus**	**£49.95**
.....	.....	**Please send me further information**	

Name .....

Address .....

.....

Please debit my ACCESS/VISA/BARCLAYCARD

No..... Expiry Date.....

Signature .....

Post to:
Digita International Ltd.,
Kelsey House, Barns Road,
Budleigh Salterton,
Devon EX9 6HJ, ENGLAND

DIGITA INTERNATIONAL

>> MAILSOFT <<

VISA

*** Simply The Cheapest Mail Order Company ***

TITLE	Atari ST	Amiga	IBM PC
Elite	11.99	11.99	14.99
Annals Of Rome	15.75	15.75	12.99
Arena/Britannicass	19.75	19.75	–
Arkanoid	9.99	19.75	12.99
Autoduel	15.75	–	–
Backlash	12.75	12.75	–
Balance of Power	19.50	19.75	15.99
Barbarian - PSY	15.75	15.75	–
Beyond Zork	15.75	19.75	15.99
Mindfighter	15.75	15.75	15.99
Crash Garrat	12.75	–	15.99
Crazy Cars	12.75	15.75	12.99
Deja Vu	15.75	19.75	–
Dungeon Master	15.75	–	–
Eco	12.75	15.75	–
F-15 Strike Eagle	15.75	–	15.75
Form 1 Grand Prix	12.75	12.75	–
Virus	11.99	12.75	–
Guild of Thieves	14.99	14.99	14.99
Gunship	15.75	–	24.99
Hitchikers Guide	15.75	15.75	15.75
Knight Orc	11.99	11.99	11.99
Leaderboard	15.75	15.75	–
Leather Goddess	19.75	19.75	19.99
Roadblasters	12.75	15.75	–
Police Quest	12.75	12.75	12.99
Night Raider	12.75	12.75	12.75
Silent Service	15.75	15.75	15.75
Starglider	14.99	14.99	14.99
De Luxe Scrabble	12.75	15.75	15.75
Battle Ships	9.99	12.75	–
Alien Syndrome	12.75	12.75	–
Foundation Waste	15.75	15.75	–
Space Harrier	12.75	15.75	–
Star wars	12.75	12.75	–
Barbarian II	12.75	12.75	–
Bionic Commando	12.75	–	15.99
500CC Grand Prix	12.75	–	15.99
Empire Strikes	12.75	12.75	–
Starfleet 1	16.99	16.99	–
Pirates – M/Pro	–	–	15.99
Eddie Edwards Ski	12.75	–	15.99
Trivial Pursuit	11.99	–	15.99
Chuck Yeagers	16.99	16.99	16.99
Destroyer	–	15.75	15.99
Power Struggle	9.99	9.99	9.99
Whirligig	11.99	12.75	15.99
E.Weavers Baseball	16.99	16.99	16.99
Chessmaster 2000	16.99	16.99	16.99
Jinxter	14.99	14.99	14.99
Corruption	14.99	14.99	14.99
Dark Castle	15.75	15.75	15.99
The Pawn	14.99	14.99	14.99
Adv Art Studio	14.99	–	–
Ultima 4	15.75	–	15.99
Peter Beardsley	12.75	12.75	–

TITLE	Atari ST	Amiga	IBM PC
Carrier Command	14.99	14.99	14.99
Starglider II	14.99	14.99	14.99
King of Chicargo	–	19.75	–
U.M.S	14.99	14.99	14.99
Jinxter	14.99	14.99	14.99
E.P.T	14.99	14.99	–
Legend of Sword	14.99	14.99	14.99
Bobble Bubble	11.99	11.99	–
Captain Blood	15.75	–	–
Fish	14.99	14.99	14.99
Defender of Crown	19.75	19.75	15.75
Time + Magick	12.75	12.75	12.75
Bionic Commndos	12.75	15.75	12.99
Soccer Supremo	9.99	9.99	–
Jewels of Darkness	11.99	11.99	11.99
Bards Tale II	16.99	16.99	16.99
Quadr Alien	12.75	12.75	15.75
Super Ice Hockey	15.75	15.75	14.99
Interceptor	–	16.99	–
3D Helicopter	15.75	15.75	12.99
Return to Genesis	11.99	11.99	–
Indoor sports	15.75	15.75	15.75
Garrison 1 or 2	–	15.75	–
Three Stooges	15.75	19.75	18.99
Stac	27.99	–	–
Gauntlet II	12.75	–	–
Rolling Thunder	12.75	15.75	–
Ikari Warriors	9.99	15.75	12.99
Gold Runner II	12.75	–	–
Return to Atlantis	–	16.99	–
Foot. Manager 2	12.75	12.75	12.99
Rocket Ranger	15.75	19.75	18.99
Test Drive	16.99	16.99	16.99
Obliterator	15.75	15.75	–
Out Run	12.75	–	–
Alien Syndrome	12.75	12.75	–
Silicon Dreams	11.99	11.99	9.99
Xenon	12.75	12.75	–
Black Lamp	11.99	11.99	–
Hotball	15.75	15.75	–
Leathernecks	12.75	12.75	–
Buggy Boy	12.75	15.75	–
Inter' Al Soccer	12.75	12.75	–
Red October	15.75	15.75	16.99
Lineker Superskill	12.75	–	–
Flight Sim 2	26.99	26.99	39.99
Gids	12.75	–	–
Sentinals	11.99	11.99	–
Thundercats	12.75	15.75	–
Micky Mouse	12.75	–	–
Barbarian-Palace	9.99	12.75	–
Aaargh	12.75	12.75	–
Street Fighter	12.75	15.75	–
Pandora	11.99	11.99	–
Shackled	14.99	–	–
Verminator	14.99	14.99	–

Accessories	Our Price
Quick Shot 2 J/S	7.99
Q.Shot Turbo	12.99
Konix Joystick	9.99
Konix + A. Fire	10.99
Euromax Profi	17.99
Euromax Non-Auto	14.99
Cheetah 125+	7.99
Cheetah Mach 1	12.99
Cheetah 125 Special	11.99
Comp Pro Black	12.99
Comp Pro Clear	13.99
Comp Pro - Extra	13.99
Cruiser Joystick	9.99
Konix IBM J/ST	18.99
Konix IBM Card	18.99
Konix IBM J/S+CD	27.99
Delta Joystick	9.99
10 x 3.5" DS.DD	14.99
10 x 3" disks	24.99
Marauder 2	29.99
Disk Disector	19.99
Digi View	189.00
Digi Paint	54.99
Digi View Adaptor	19.99
Mouse Mat	4.99
Amiga A500 Cover	6.99
Atari STFM Cover	6.99
PC-1512/1640	10.99
14" Antiglare Screen	19.99
Head Cleaner 3.5"	6.99
Head Cleaner 5.25"	5.99
Light Pen PC1512	17.99
★★ SEGA SOFTWARE ★★	
Sega System + Game	94.99
Konixs J/Stick	11.99
Alien Syndrome	22.99
Alex Kidd II	22.99
Cube Zone	17.99
Zillion II	17.99
Wonderboy II	22.99
After Burner	22.99
Space Harrier	22.99
Rocky	22.99
Outrun	22.99
World Grand Prix	17.99
World Soccer	17.99
Gangster Town	17.99
★★ NINTENDO SYSTEM ★★	
Control Deck	99.00
Golf	22.99
Mach Rider	27.99
Soccer	22.99
Donkey Kong	18.99
Super Mario Bros	22.99
Popeye	18.99

Prices include P&P in U.K Europe add £1 per tape, elsewhere £1.50. Cheque/P.O payable to: **MAIL-SOFT** (SAF) P.O Box 589, London N15 6JJ. Please specify machine type in your order. Add £5 P&P for Machines.

Price matching: **If you see a title cheaper by another company in this mag we will match the price. If you don't see the title you require, simply deduct 30% off the R.R.P and send to us.** (Except Budget, Sega, Nintendo Software).

We stock software & joysticks for all machines. All new releases, are subject to releases dates from software houses. Access and Visa cards accepted.

16 BIT CENTRE

HOME & BUSINESS COMPUTERS

HARDWARE

Atari STFM Summer Pack 1 Meg Internal Drive & 22 Games	353.00
Amiga A500 + 3 Games, Modulator, Deluxe Paint	399.00
Amiga A500 as above with The Works (Scribble -Wordprocessor, Organize-Database, Analyze-Spreadsheet)	459.00
Citizen120D Printer with lead ST/Amiga	£149.00
1 Megabyte Drives ST/Amiga	99.00
Memorex DS/DD per 10	19.00
Amiga A500 + Commodore 1084 colour monitor	649.00
Amiga Business Pack (*phone for details*)	775.00
Amiga A2000	£1050.00
C2 230 S Midi Keyboard	269.00

MIDI SOFTWARE AVAILABLE PLEASE PHONE

AMIGA SOFTWARE

The Works (Scribble, Organize, Analyse)	69.00
Studio Magic	65.00
Deluxe Video	48.50
Sculpt 3D	59.00
Interceptor	18.95
Football Manager II	18.95

Bachelor Gardens. Harrogate
North Yorkshire, HG1 3EE
Tel: (0423) 526322

All prices include V.A.T & Postage, Courier Extra

ST AMIGA FORMAT
The complete package for Atari ST and Commodore Amiga owners

READER OFFERS

Our selection of the best applications software packages

POWER BASIC Atari ST • £39.95 • HiSoft

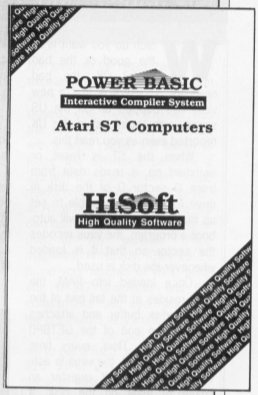
One of the frustrations Atari ST owners face is the relatively poor Basic supplied with the machine.

HiSoft's *Power Basic* is a far better bet and offers programmers immense power, which is why we've made it the basis for our Basic programming course.

The demo version on the August issue cover disk shows you just what the package is capable of – check out these features:

- Much faster than ST Basic.
- Compiler creates stand-alone programs.
- Unlimited string length.
- Complete AES and VDI access.
- Joystick access.
- Quick reference card.
- Multi-line statements.
- Load and use resource files.

FREE SOFTWARE!
A disk containing powerful Atari ST utilities is yours when you order HiSoft Basic through this magazine.



The full package includes a large manual (plus the ability to Load and Save which have been disabled in the demo version).

If you're serious about programming, this is the program you need.
Order Code FO21ST

HOW TO ORDER

To order any of these packages, just turn back one page and fill in the Order Form. Or telephone us on 0458 74011 for a Credit Card order.

DIGICALC

Atari ST and Amiga • £29.95 (RRP £39.95)

This spreadsheet from Digita International has already established a reputation for itself on both the Amiga and the ST. We need say little more about Digicalc since not only have we reviewed it, but a demo of the ST program is included on the August issue cover disk – so here's your chance to really try before you buy!
Order Code (ST) FO20ST
Order Code (Amiga) FO20AM

DELUXE PAINT II

Amiga • £59.95 (RRP £69.95)

This is something else – Electronic Arts' graphics program which comes from the US with gushing, almost embarrassing, praise. You can paint on a 'canvas' that is bigger than the monitor screen – 1008 by 1024 pixels, with 32 colours in low resolution or 16 colours in high resolution. Full percentage colour mix is possible, including hue, saturation and contrast for each colour. Full zooming in is possible, with special animation effects including Colour Cycling which offers almost cartoon-like movement qualities. There's an unlimited variety of paint brushes you can use, a complete set of shape and line tools, and a range of special effects which will let you create banners, calendars, cards, newsflashes – anything can be done with a splurge of style which is the result of a program which really lets your imagination loose. **Try it – you won't be disappointed!**
Order Code FO22AM

FREE DISKS
A pack of 5 high-quality DSDD blank disks is yours when you buy Deluxe Paint II from us!

CREDIT CARD HOTLINE
0458 74011

VISA

GOLD DUST

Steve Gold reports on the American ST and Amiga scenes, bringing news of the good (new operating systems), the bad (viruses) and the ugly (bugs) from over the Big Pond.

Which do you want first: the good or the bad news? OK, the bad news for ST users is that a new virus has popped up on the US scene, with 'sightings' in the UK reported even as you read this.

When the ST is reset or switched on, it reads data from track 0 sector 0 of the disk in drive A. Since it's possible to set up that sector so the ST will auto-boot a program, the virus recodes the sector so that it is loaded whenever the disk is used.

Once loaded into RAM, the virus resides at the tail end of the system disk buffer and attaches itself to the end of the GETBP() bios function. Thus, every time GETBP() is called, the virus is activated. If it doesn't register an image of itself on the disk, it writes a copy of itself to that disk.

Every time the virus copies itself to a fresh disk, it increments a counter. After a random number of writes, the virus begins spraying random data across the root directory and FAT tables, thereby corrupting your disks.

Now comes the crafty bit. After all this is done, the virus deletes itself from the boot sector, thereby destroying the evidence. Although the virus doesn't harm hard disks, it can still screw up your disk collection, as many auto-boot hard disks, such as the Supra series, use an autoboot floppy disk in drive A, which can carry the virus.

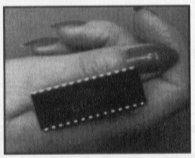
The cure? Check out sector 00 of each disk with a disk sector editor (eg the Tiny Tool accessory on this month's cover disk). If all is well, the boot sector will contain 60 (hex) as its first byte. If it doesn't include 60 (hex) as the first byte, be very suspicious.

It seems that this virus is not the end of the story. Nasty rumours at the moment suggest there is a new virus around which is almost impossible to detect since for each disk inserted it scans for any *.PRG files and appends itself to the text segment in some way.

The good news

The good news for ST users is that Atari is currently checking out a new version of TOS. Beta test versions are now in the hands of developers in the US and the new TOS should be with us in the UK by the Autumn. The beta test kit comprises:

- TOS ROM set, configured for local keyboard and American text.



- Diskette containing: RAM loadable image of TOS, same configuration as ROM; Disk cache program "CACHExxx"; HDX Hard Disk utility, HINSTALL and associated programs, Product Tracking System front-end program "SPRgen"
- Release Notes for: TOS, CACHExxx, HDX, HINSTALL etc., (modified to 30/60MB hard disks); Draft User Manual for HDX, HINSTALL etc.; User guide for Product Tracking System; Various programs, files and tools to assist in translation.

Although the Beta version of the new TOS has only been around a few days at the time of writing, the main advantages appear to be that: disk formatting is more compatible with the IBM PC format; a file can now be moved (ie. copy then delete) in one operation; file Copy/Delete/Move can be interrupted with UNDO; GEM programs can be autobooted from disk.

Other advantages of the new TOS also include: the static file allocation limit of 400 is removed and is now limited only by free memory, and all data separators are now '/'. The file selector function has also been rewritten.

Finally on the ST front for this issue, two new software packages are attracting a lot of interest. The first package is the Animatic Animation System from Kinetic Microsystems (0101-301-964-3180), the second is Revolver from Intersect Software (0101-813-923-8774). Both packages cost $49.95 which should equate to about £30 when they appear in the UK.

Animatic allows users of the ST to quickly create professional quality animated shapes. The package includes a module called Sorcerer which converts animated shapes into screen-driver source code.

Revolver meanwhile, takes a program running under TOS, GEM or TTP, and freezes it, writing the appropriate RAM contents to disk. The beauty of Revolver is that it's not a desk accessory and is thus active at all times.

In the Amiga corner

Some good news for Amiga users with modems this issue is the launch of an online newsletter for Amiga users. *Amy Report* is the brainchild of Ron Kovacs who distributes the free newsletter each month via *Compuserve*, *The Source*, *Genie* and a growing number of online systems. Several BBSs are picking up on the newsletter which offers the immediacy of an online system with the benefits of a magazine.

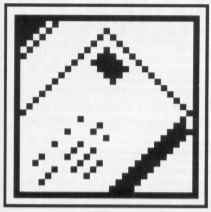
If you have a modem, but have difficulty getting hold of copy of Amy Report, then Email me, Steve Gold, on Telecom Gold 72:MAG066 and I'll send you a copy.

Issue one of Amy Report came out on 13 June, coincidentally about the same time as #1 of ST/Amiga Format hit the streets. The first issue covers such interesting topics as Amiga Flight Simulators and online conferencing systems, as well as review of Phasar, Wordperfect Library and a number of other Amiga software packages.

WordPerfect
FOR THE AMIGA

Talking of Wordperfect, a number of bugs have been discovered in the Amiga version of the package. While spell-checking a text file containing letters and numbers, option 4 from the spell-check choice menu causes the program to crash. This bug is being fixed by Wordperfect at the time of writing.

Also giving cause for concern is the PRINT module which locks up the Amiga for no apparent reason. The problem appears to lie with Workbench's PRINTER.DEVICE module, which Commodore has fixed on release 1.3 of Workbench.



FORMAT LETTERS

So what did *you* think of issue 1? Here's a Summery summary of the Format postbag. Don't get left out next time though – send your thoughts, questions, praise and polemics to: Format Letters, ST Amiga Format, 4 Queen Street, Bath BA1 1EJ.

Monoware problem

Dear Format – I own an Atari 520 STFM with the latest version of TOS, and that is where the problem lies. I read through the magazine to find out what was on the disk. Oids – great; RAM Disk – brilliant; and at last a mono emulator – but would it work? No! It seems that your mono Emulator refuses to work on all ST's with the latest TOS. The screen flashes, the machine 'locks up' and that's all you get.

Robert Allen
Wakefield, W. Yorks

■ *Sorry, our fault. We didn't have a new ROM ST to test it out on, and by Sod's law it doesn't work, of course. You should find a bug-fixed version this month though – look in the MONOWARE folder on the disk.*

Amiga on telly

Dear Format – I have bought an Amiga 500 and I own a Ferguson TX 14" television with RGB and would like to know if I could connect the two, either by a lead I could buy or by a home made one. I would be very grateful if you could help me.

N Bamford
Burslem, Stoke-on-Trent

■ *Unfortunately we haven't got a Ferguson TX to experiment on, but the Amiga puts out standard video signals. If you can get the right lead made up you'll get a picture, but unless the TX has a separate sound input you won't get any audio – and certainly not in stereo as per a real Amiga monitor.*

Picture that

Dear Format – What about an opinion on the mono monitor view – with Flight Simulator II for the ST, for instance, it's a bit hard to distinguish scenery. If I had known that I might not have bought it.

The disk idea was brilliant! (Who wants type-ins?) However, one small niggle: the document files that accompany the ST programs – why oh why has every line been centered? I have a printer and like to get hardcopies of instructions at 80 characters per line. Please change it in future or tell me how to re-format the text using First Word.

The disk idea would really lend itself to picture files – what about a competition for the best pictures? You could put the winning entries on the disk.

Rod Lavers
Hastings, E. Sussex

■ *The man responsible for centring the text has been taken outside and had his knees stapled together. A good way to get rid of spurious spaces in a WP is to use the Find/Replace function to globally replace all double spaces by a single space, and repeat this until they are all gone.*

And disk art pictures – yep, a brillo idea. You send 'em in, we 'll use 'em . Get painting.

New ST drives

Dear Format – At last, a comprehensive, unbiased, and generally brilliant 16-bit magazine. Yes, I mean you ST Amiga Format. The reviews are good, features (especially Futures) better, and the cover disk... all magazines containing listings – eat your heart out. So, who better to answer my questions?

Firstly, do you know of any external 1 meg disk drive (3.5" of course) which I could strip, exchange for the internal 0.5 meg inside my 520 STFM and then use my old 0.5 meg with the external's case, power supply and leads, *without* having to cut either case (possibly swapping eject mechanisms?)

Next, I'd like to buy a Blitter Chip for my machine, but don't know whether my Rev. B 520STFM board requires extra hard/firm/soft ware, or even where to buy a Blitter.

My final question involves how to make a GFA Basic .PRG or 68000 program a disk accessory. I haven't the remotest idea how to do this, though I am constantly asking friends.

Stephen Kendrick
Plympton, Devon

■ *Well, we've never heard of anyone trying to swap disk drives in the way you describe – proceed at your own peril. Datel for one sell 1 Meg internal and external drives (£99.99 and £114.99 respectively), but shop around the mail order ads for a good price. As to blitters, you can fit them to 520s, but it's a matter of soldering them over other chips there's no empty slots as on the Mega. Anyway the chips are in extremely short supply from Atari at the moment. Even the Mega STs that are supposed to have Blitters as standard are going out without them.*

As to accessories, there aren't many good books, but HiSoft's Devpac 2 for the ST allows you to assemble programs as accessories.

4 out of 5

Dear Format – I have filled in your questionnaire but some of the comments I wish to make are too longwinded for the space provided.

1) Overall a very good well presented magazine.

2) Standard games reviews were very good, but the special attention given to the major games was excellent with continuing screen shots showing the game as it was played. One minor letdown was the score scales: they could do with a larger range. It is harder to judge the difference between a 2.5 and 3.5 than between similar marks on a scale of, say, 1 to 10.

3) As a newcomer to owning my own computer (I have had a lot of use of my parents' office machines, Amstrads, IBMs etc.. I found your reviews of WPs, printers, BASIC languages and the comparisons and information on the computers very useful.

Lastly, a question. Is it possible to get a 5.25" inch disk for the 520 STFM and a PC emulator, because both my parents use IBM compatibles and this would be very useful both for me and them?

Paul Edge
Beccles, Suffolk

■ *PC Ditto is an ST PC emulator, price £79.95 from Eidersoft (0800 581742). This is software only and doesn't come with a disk drive – a 5.25" drive is £169.95 extra. You may be better getting a 3.5" drive for the PC. as he ST can read and write ordinary PC 3.5" disks.*

Dark side

Dear Format – Congratulations, on a very good mag. I loved the disk. After reading through your mag I was very pleased on its contents, except for one little thing. Was your camera wearing dark sunglasses on the 'games reviewed' screen shots, or were you using a black & white TV? Or did you just print most of the screen shots in B/W to save money! When you're charging £2.50?!?

OK, so you give away a free disk. How much did it cost you? The public can buy double sided disks (3.5") for 85p, so when you

order 40,000 I am willing to bet that each disk never cost you more than 70p. Take that away from your cover price and you're left with (erm...) £1.80; take 10p away for copying costs and you're left with £1.70, and it isn't even full colour? I am not asking for a cover price cut, but just a full colour mag... please?
SAF
Manchester

■ *In an ideal world we'd be full colour with 200 pages a month, but unfortunately it costs dosh. Your pricing calculations aren't quite right; as publishers we only get about half the cover price back from sales. after the newsagent's markup. So from a shelf price of £2.50, £1.60 of that goes if we are to get 80p to cover the disk costs (working on your figures). That means you are really getting the mag for 90p, which can't be bad. Still, we will get fatter and more colourful – stick around!*

Iconoclast

Dear Format – I was sitting in my room in front of my Amiga (as most people do), and after telling everyone to get out of my room I turned my thoughts towards how to copy all the AmigaDOS commands to the RAM disk (being in the unfortunate position of owning one overworked and noisy internal drive). Pause for breath.

I had managed to copy C to RAM:C but couldn't make it work from there, so flicking through the manual I came across ASSIGN. However, there is no info on how to use it, at which point I came to the conclusion that Commodore employed a Chimpanzee to write the manual. You can understand my surprise the next day when reading my computer journal that Bubbles the Chimp had been sacked (something about giving detailed descriptions of commands in a new manual he was writing).

Not to be outdone, I persevered and found that ASSIGN C: RAM:C does the trick. With my confidence growing I made a simple icon on the parent directory of Workbench called CRAM and made a file of the same name containing the relevant commands to copy C to RAM etc. You're probably laughing at me, but it was worth a try. OK, so it didn't work. I'd like to know if this can be achieved without the use of assembler; I don't want it in the startup-sequence because I don't always want the RAM: full and loading would take too long.
Craig Elliot
Heaton, Newcastle-on-Tyne

■ *The secret of attaching icons to Amiga files is a mystery that only a select few know. Try the PD program Xicon, mentioned in this month's article on Amiga PD, or alternatively put a conditional sequence in your startup-sequence with an ASK command as outlined in the 'Workbench' section.*

Diskdoctor ills

Dear Format – You recommend with damaged disks use the Amiga's DISKDOCTOR to fix this. I have tried this on *Barbarian* (Psygnosis) which was corrupted. It loaded fine, but when the start key was pressed – Software Failure.

Can you suggest anything to rescue the situation?
Brian Flynn
Dublin, Ireland

■ *Diskdoctor is only guaranteed to work on normal Amiga disks. It can't repair copy-protected disks such as those games come on, and you should never use it on master disks anyway. Send your Barbarian master disk back to Psygnosis with a pleading letter and they should swap it for a new one.*

Easy as 1, 2, 3

Dear Format – Here are some points to improve your mag. You don't have to agree with them, but:

1) More games reviews needed – 7 reviews just isn't enough to keep up with this growing industry. But the reviews of 'Interceptor' and 'Virus' were the best I've ever seen, brilliant!

2) Articles on the 'serious' side of computing, (eg DTP and Superbase Professional) are boring. Besides, if a businessman is going to buy a program for business then he won't look in a mag that reviews games – he will find a mag that is all 'serious'.

3) Keep the free disk idea, it's original and great. And 'Superheroes Inc' cartoon is hilarious.
G Hindshaw
Dursley, Glos

■ *We don't want to become another 16-bit games magazine – there are already enough of them out there. Format's strength is its balance of all aspects of the machines, and we intend to keep it that way. Sorry, that's the way it goes.*

D-Basing remarks

Dear Format – Does anyone know how to obtain a copy of the manual for D-BASIC? The phone number given on the P.D. disk has been disconnected.
Ian Hawkins
Manchester
P.S. If you've not come across D-BASIC, it's a very very fast, very very basic BASIC for the ST (roughly ten times faster than some commercial BASICs at real double precision maths, but apparently no ENDIF statements, and a grotty screen editor. I got my copy from Softville PD library.

■ *We've rung Softville who don't seem to know much more than you. Does anybody else out there use D-BASIC and could help locate the authors?*

THUMBS UP FOR FORMAT

More equal

Dear Format – I think it is great... bloody great even that someone has finally resolved the Amiga/ST argument by putting both of these superb machines on an equal footing and having the nerve to publish a magazine which by its very nature doesn't spout endless drivel about the virtues of a single machine. My particular machine is an A500 Amiga, my preference.

Needless to say the Atari and the Amiga are here to stay, and are well and truly overriding the old faithfuls – the Spectrums and C64's are on the slide. That's not to say they weren't good machines in their time, but the microcomputer industry and technology has given us the next generation of 16 and 32 bit micros. The future is up to the Amiga and ST users, and all the staff at STAF.
Martin Caldwell
Eastwood, Notts

Quantum question

Dear Format – I eagerly awaited the arrival of ST Amiga Format. I was a little dubious about it being for both the ST and Amiga, thinking it would perhaps be biased towards the Amiga. (I own a 520 ST-FM). When I finally did pick up a copy, I was instantly impressed – the layout, the style of writing, the reviews, everything seemed well done. All of the programs on the disk have been of some use to me.

You also stated in the article 'Over the Rainbow' that Quantum Paint could only display all 4096 colours on a system with 1Mb of RAM. I have a 0.5Mb system and still obtain the 512/4096 modes. However, I have never tried to get all the colours on screen at once, so maybe that is where the limitations occur.

The review of Virus was outstanding, with all those screen shots showing the action – lets have more like it, please!
Duncan Pollard
Guisborough, Cleveland
P.S. – Does someone there have a pet armadillo?

■ *Pet armadillo? What a ridiculous idea. OK, you've rumbled us. She's called Agnes and we take her out for walks at lunchtime.*

Grovel, grovel

Dear Format – Why do magazine letter writers cringe and fawn – saying how good the magazine is. All the mags I read, yours included could be improved – or is it only the fawning lackeys who get published?
Michael Kington
No address

■ *You don't have to fawn, but it helps. Otherwise we edit out all the interesting bits of the letter; a bit like this one really. Seriously, you're right – all magazines can be improved and we really value suggestions from readers. Keep 'em coming.*

Jerk advice

Dear Format – I am writing to congratulate you for producing an excellent first issue.

Your review system is great, separate parts going into detailed reviews about each aspect of the game. I think your mag is the only one which highlights the pluses and minuses of the graphics and sound. I mean, did anyone warn us about the slow, jerky animation on either Barbarian or Obliterator? No, but I'm sure you would have.
Michael Armstrong
Peterlee, Co. Durham

POOLSWINNER II

THE ULTIMATE POOLS PREDICTION PROGRAM

- **MASSIVE DATABASE** Poolswinner is a sophisticated Pools prediction aid. It comes complete with the largest database available – 22000 matches over 10 years.
- **PREDICTS** Not just SCOREDRAWS, but AWAYS, HOMES and NO SCORES.
- **SUCCESSFUL** SELEC guarantee that Poolswinner performs significantly better than chance.
- **ADAPTABLE** Probabilities are given on every fixture – choose as many selections as you need for your bet. The precise prediction formula can be set by the user – you can develop and test your own unique method.
- **SIMPLE DATA ENTRY** All team names are in the program. Simply type in the reference numbers from the screen. Or use FIXGEN to produce fixture list automatically (see below).
- **LEAGUE AND NON-LEAGUE** All English and Scottish League teams are supported, and also the non-league sides often used on pools coupons.
- **PRINTER SUPPORT** Full hard copy printout of data if you have a printer.

PRICE £18.00 (all inclusive)

NOW AVAILABLE

FIXGEN 88/9

AT LAST. No more struggling for hours to get the fixture list into the computer. FIXGEN has been programmed with all English and Scottish League fixtures for 1988/89. Simply type in the date, and the full fixture list is generated in seconds. Fully compatible with Poolswinner. Yearly updates available.

POOLSWINNER with FIXGEN £19.50 (for both)

COURSEWINNER V3

NOT JUST A TIPSTER PROGRAM, Coursewinner V3 can be used by experts and occasional punters alike.

THE PUNTERS COMPUTER PROGRAM

You can develop and test your own unique winning system by adjusting the analysis formula, or use the program in simple mode. Coursewinner V3 uses statistical analysis of major factors including past form, speed ratings, course statistics, prize money, weight, going, trainer and jockey form etc, etc. It outputs most likely winners, good long odds bets, forecasts, tricasts etc. The database includes vital course statistics for all British courses. You can update the database – never goes out of date. *FULL PRINTER SUPPORT.*

PRICE £18.00 (all inclusive) includes Flat AND National Hunt versions.

AVAILABLE FOR

All supplied on tape ... (Automatic Conversion to disc)

AMSTRAD CPCs
BBC
COMMODORE 64/128
SPECTRUM

DISCS ... (Add £3.00)

AMSTRAD PCW
IBM Format
COMMODORE AMIGA
ATARI ST

Send Cheques/POs for return of post service to ...

selec SOFTWARE

VISA

phone 24 hrs

62 ALTRINCHAM RD, GATLEY, CHEADLE, CHESHIRE SK8 4DP. ☎ 061-428 7425

(Send for full list of our software)

ADVERTISERS INDEX

16 Bit Software	92	Kingsway	83
17 Bit Software	97	Ladbroke	4
Arnor	78	Lightspeed	81
Byteback	81	Mailsoft	92
Byteware	15	Melton	78
Castle Computers	39	Metacomco	15
Centec	30	NBS	97
Cestrian	35	N. Notts Computers	20
Classic Software	32	Ocean	55
Clik	7	Precision	59
Compumart	IBC	Psygnosis	66
Computer Adventure World	30	SDC	71
Cut Price Software	83	ST Club	83
CYB Computers	81	Selec	97
Datel	42-43	Silica	9
Digita	92	Siren Software	28
Domark	50-51	Soft Stuff	30
Electronic Arts	44	Softville PD	15
Evesham Micros	24	Star UK	28
Grand Slam	OBC	Timesoft	78
Hisoft	11	Titus	58
Intermediate	63		

NBS

NEWPORT (I.W) BUSINESS SUPPLIES

21, Priory Road, Newport, Isle of Wight. PO30 5JU.

3½" DISKS

Pack of 5.....£5.50 Pack of 10.....£9.95

Disks are Double Sided, Double Density, 135TPI, Guaranteed.

BOXES

40 Capacity.....£6.95 80 Capacity.....£8.95

Prices include ★ Disk labels ★ Postage & Packing ★ VAT

Cheques/P.O. to **Newport (I.W) Business Supplies**

••••FREE MEMBERSHIP!••••

For Free membership of the fastest growing ST/Amiga User Club simply select any of the discounted titles listed below. Membership entitles you to many special services and also a regular PD library update on disc form that includes superb demos, art, music as well as news and gossip. Thousands of 16 Bit users have already tried us and are over the moon with the outcome - ***Try us NOW!***

ATARI ST

TITLE	RRP	OURS
Bionic Commmandos	£19.95	£14.95
Buggy Boy	£19.95	£14.95
Football Man II	£19.95	£14.95
Outrun	£19.95	£14.95
Gauntlet 2	£19.95	£14.95
Dungeon Master	£25.95	£17.95
Carrier Command	£24.95	£17.95

COMMODORE AMIGA

TITLE	*RRP*	*OURS*
The Sentinel	£19.95	£14.95
Buggy Boy	£24.95	£17.95
Interceptor	£24.95	£17.95
Football Manager 2	£19.95	£14.95
Three Stooges	£29.95	£22.95
Aaargh !	£19.95	£14.95
Sidewinder	£9.95	£7.95

The above titles are only a tiny part of our range for the ST Amiga. Please call if the title you require isn't shown. ALL software shown is available and advance orders can be taken for any title not yet released.
We have a large library of the best PD available for the ST Amiga, each PD disc is just £2.50 inclusive. The library is on disc form and is also a forum for members ideas, letters, hints etc as well as the latest demos and programs.

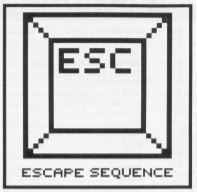
You may also get free membership by ordering our latest update for your machine, at just £3 this is great value! " ...the best thing to happen to the Amiga..."

17 BIT SOFTWARE

P.O BOX 188, LEEDS LS1 6BS. TEL 0532 420043

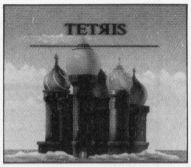
"That Bit Better Than The Rest!"

Access and Visa welcome 9.00am - 5.30pm Mon-Sat



Nyet, comrade

The Russian game *Tetris* has by all accounts gone down a storm in America, which is little wonder as it's a great game. What didn't go down quite so well back in the USSR was that the US conversion for the PC contained a slight modification to the title screen. This originally showed a beautiful picture of the Kremlin, but the programmers in the States added in a small plane buzzing round the gleaming spires – a plane not totally dissimilar from the Cessna flown by Mathias Rust when he landed in Red Square flaunting the Russian defences last year. Future licensing deals may be subject to a little more monitoring...



■ *The Tetris title screen, a la Rust.*

ST AMIGA FORMAT

ST Amiga Format spins onto the shelves on the third Thursday of each month. Eyes peeled for issue 3 on August 18th.

Letter of Protext

After last month's survey of word processors we weren't entirely surprised to receive letters praising one particular program or another. Even so, our cynical journalists' minds were set spinning by the following from Mr Douglas Thompson of *Thompson Computers* in Peterborough:

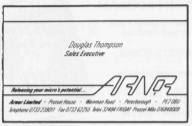
I am writing to complain about the comments you made regarding Protext in the July issue of ST Amiga Format... I have been using Protext for over a year now and could not, nor would choose to, use anything else... I would like to know what you found lacking in Protext as I have found very little.

Everyone's entitled to their own opinion, of course, but it's interesting to note that:

a) Protext's publishers, Arnor, are based in Peterborough too.

b) The ST Protext has only been on sale for two months.

c) One of the business cards we recently picked up at a show had certain salient details in common with Thompson Computers:



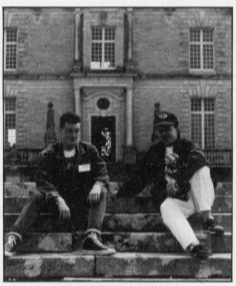
In parallel

It's not normally our practice to mention other publications in our pages, on the grounds that they might do the same to us. In this case, though, we feel fairly safe as the organ under consideration is *Parallelogram*, a journal devoted to parallel processing (transputers and all that stuff).

Apart from the novelty of its subject matter, we had a press release recently from Parallelogram announcing a reduction in their subscription rates – they obviously had a little trouble shifting copies at their initial subscription rate of £289, and have knocked a modest amount off next year's rates. It's come down by £250 to £39 per year – now that's what we call a price cut.

As journalists, the nation looks to us for moral guidance; alone we fight the forces of bribery and corruption. In late June an invitation from French games house Ubi Soft arrived in the Format offices for a weekend at a chateau in Brittany – we immediately recognised this as a blatant attempt to seduce the games reviewers of Europe into covering their products, and had no hesitation in accepting the offer. Pictured here on the step of Chateau Ubi are Andy Smith from our sibling magazine ACE, and intrepid Format gamester Andy Storer (he's the one with the silly hat, by the way). You may have noticed that to be a successful games reviewer you've got to be called Andy.

Isn't it reassuring to know that this kind of cheap publicity stunt never works?



Superheroes, Inc.

by Sarkar

THE SECRET BASE OF B.E.L.C.H.*
YAHAH!
RED ALERT
BZZAAAP!
BAM!
EAT SWORD, COURTESY OF... ATARI WARRIOR!
WITH LEAD SALAD a la COMMODORE MAN!
BROTHERHOOD OF EVIL LUNATIC COMPUTER HACKERS
BAM! YOU'VE TRASHED MY MINIONS, BUT I...
...HACKER PRIME...
BOMB
WILL BLOW YOU AWAY!
GODDAM IT...
OH, POOH!
HEY... BUSY SWINE.
THUD
OUR INFO WAS RIGHT!
BELCH WAS CODING ST AND AMIGA VIRUSES RESISTANT TO ALL KNOWN VIRUS KILLERS!
WELL, COMMIE... ANOTHER SUCCESSFUL MISSION.
YEP YA KNOW, ATTY WE'RE A PRETTY GOOD TEAM.
WE SHOULD QUIT FIGHTIN' EACH OTHER ALL THE TIME...
SO WE'RE BUDDIES NOW?
SURE WE ARE!
GOOD NOW YA WON'T GET SO MAD WHEN I TELL YA I'VE REDUCED THE AMIGA TO £349.99.
YOU @#%$! THAT'S A DIRECT ATTACK ON THE ST'S PRICE ADVANTAGE!
WELL, AIN'T THAT TOUGH... OL' BUDDY
AK!
TAKE THAT!
BIFF!
YOU TAKE THIS!
OUCH!
EAT FIST!
SWAK
BOP!
OOF!
BELCH SECRET BASE NO TRESPASSING
SS/ARNA

Cut the cost
Cut the hassle
Cut the coupon!

AMIGA
3.5" Disks and Storage Box information included in this pack. please send for details.

DEPARTMENT **SAF**
JUBILEE DRIVE
LOUGHBOROUGH
LEICS LE11 0XS
TEL: 0509-610444
FAX: 0509-610235

Send Now for your *Free* copy of the Compumart ST Information Pack and discover a full range of ST Accessories at Super Low Prices . . . .

For IMMEDIATE RESPONSE, simply send this coupon to:
COMPUMART · FREEPOST · LOUGHBOROUGH · LEICS · LE11 0BR

Please rush me . . .

	PLEASE TICK
A FREE Compumart ST Information Pack	
I own/am interested in an AMIGA ☐ ATARI ST ☐	

SAE

Name . . . . . Address . . . . . Postcode . . . . . Date . . . . .

GRANDSLAM

ANNOUNCES

DATASOFT'S ALTERNATE REALITY — THE CITY

SPECIAL OFFER £2 off either The City or The Dungeon

alternate REALITY® The City

NEW

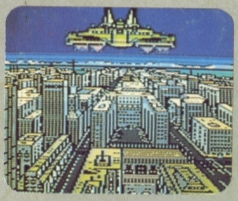
This role-playing/adventure game surpasses any you have ever played before. Alternate Reality™ incorporates the ultimate in 3D graphics with original music that weaves through the game to establish the illusion.

The game begins with your abduction by an alien spacecraft. When you finally reach your destination you find yourself in a room with only one exit. Through this opalescent doorway you see a City. Overhead is a panel displaying constantly changing numbers which represent levels of intelligence, strength, dexterity, wisdom, charm, and health. At the moment you pass through the portal the numbers freeze and your Alternate Reality begins. The levels of intelligence, strength, etc. at which you begin your adventure are determined at this point.

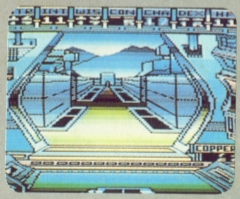
Once you're in the City, you encounter all sorts of strange and wonderful beings. The sun rises and sets, rain falls, and secret doors lead you into unexpected perils and delights. You must improve yourself physically, mentally, morally, and financially in order to reach your goal: return to Earth or seek revenge on your abductors.

ALTERNATE REALITY - THE DUNGEON Available on: C64 Disk & Atari ST and on Apple II in the New Year.

AMIGA and IBM/PC £19.95



- ★ **The Ultimate Role Playing Fantasy Game**
- ★ **3 Dimensional Scrolling**
- ★ **Original Music**



Already available on: C64 Disk; Atari ST & Apple II

WATCH OUT FOR MORE GRANDSLAM/DATASOFT PRODUCTS - NOT TO BE MISSED!

Write now for your copy of The City and/or The Dungeon by sending a cheque or postal order together with the money off voucher at top of page, to Grandslam Entertainments Ltd, Units 1/2 Conlon Developments, Watery Lane, Darwen, Lancs BB3 2ET, or phone 01-267 6434 our credit card hotline (Access or Visa)

GRANDSLAM AND Datasoft®

ALTERNATE REALITY is a registered trademark of Paradise Programming, Inc.
Datasoft is a registered trademark of Intellicreations, Inc.
©1985 Intellicreations, Inc.
Published under license by Grandslam Entertainments Ltd. for Europe and Australasia.
© 1986 Grandslam Entertainments Ltd.
12-18 Paul Street
London
EC2A 4JS